



The **NO KID HUNGRY**
Social Innovation Fund Campaign

Corporation for National and Community Service
Final Report

October 31, 2019

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EXECUTIVE SUMMARY

Grantee: Share Our Strength **Evaluation Contractor:** RTI International **Years:** 2015–2018

Subgrantees:

Florida Impact
Hunger Task Force (WI)
Texas Hunger Initiative

Three Square Food Bank (NV)
United Way of King County (WA)
United Way for Southeastern Michigan

❖ **PROGRAM AND INTENDED OUTCOMES**

Childhood hunger and food insecurity remain intractable problems in the United States, despite efforts to reduce or eliminate them. In 2010, Share Our Strength launched its No Kid Hungry (NKH) campaign to spark transformative change to end child hunger nationwide. In 2014, the Corporation for National Community Service determined that Share Our Strength had preliminary evidence showing that NKH strategies increase program participation in federal nutrition programs and awarded them a multi-year Social Innovation Fund (SIF) grant to expand their NKH campaigns in six states and extend the evidence base supporting the impact of these campaigns on child hunger.

❖ **RELEVANT PRIOR RESEARCH**

The NKH campaign model is grounded in research that indicates that participation in some federal nutrition programs has a positive impact on children, including reduced food insecurity and increased nutrient intake.¹⁻⁴ Share Our Strength conducted research and evaluation on the NKH strategies, and has preliminary evidence showing that NKH strategies increase program participation in federal nutrition programs, which has been shown to reduce food insecurity.

❖ **TARGETED LEVEL OF EVIDENCE**

There is little research to date that provides moderate evidence for strategies such as those implemented in the NKH SIF campaigns. The current program evaluation design sought to generate a moderate level of evidence, thus increasing the rigor and scale of Share Our Strength's evidence for their NKH campaign approach to reducing child hunger.

❖ **EVALUATION DESIGN**

The evaluation included two main components, an impact evaluation and an implementation evaluation.

Impact Evaluation: A quantitative study to measure the effects of the NKH campaigns, encompassing two quasi-experimental designs (QEDs):

- **QED1: Evaluation of USDA administrative data** (i.e., federal nutrition program participation data collected by states for each school year; these data are a census including all students) combined with national sociodemographic data (e.g., urban/rural designations and school-based demographics from National Center for Education Statistics [NCES], and percent Hispanic from the American Community Survey, and citizenship estimates from the 2010 Census), and
- **QED2: Evaluation of survey data** from interviews and diet recalls (primary data collection). The primary data collection portion consisted of two main components:
 - **Main Study:** Interviews with independent random samples of students from three NKH SIF campaign intervention elementary schools and three matched control elementary schools were conducted at baseline (September 2016–May 2017) and follow-up (October–December 2018.).
 - **Ancillary Study:** Interviews with independent random samples of students from three NKH SIF campaign intervention elementary schools from three subgrantee sites were conducted at the same data collection timepoints as the main study.

Implementation Evaluation: A qualitative study to contextualize the findings of the impact evaluation.

- **Subgrantee Case Studies:** Case studies involved collecting subgrantee documentary evidence and conducting semi-structured interviews with 10 to 15 subgrantee implementation staff, leadership, and partners at each impact evaluation site at baseline, and 7 to 11 phone interviews with subgrantee implementation staff and leadership, Share Our Strength staff, and two school educators at follow-up. Case study data collection took place at the same time as the quantitative data collection.
- **Subgrantee Activity Trackers:** Reports developed to provide insight into the strategies the subgrantees used across programs over the course of the NKH SIF campaign. These were collected for 11 quarters between October 2015 and June 2018.

❖ MEASURES/INSTRUMENTS

Reduction of childhood hunger was assessed using the following measures:

- Increased participation in key child nutrition programs,
- Reduction in food insecurity,
- Increased meal and/or snack consumption, and
- Improvement in overall dietary intake.

Survey questionnaires for the Impact Evaluation included questions about sociodemographic characteristics, food security, dietary intake patterns, and exposure to NKH SIF campaign activities. RTI collected 351 complete interviews at baseline and 297 at follow-up across the Main and Ancillary Studies.

For the Implementation Evaluation, semi-structured, in-depth interviews were conducted that gathered information about aspects of each NKH SIF campaign's design, development, and implementation.

❖ ANALYSIS APPROACHES

We conducted a mixed method evaluation focused on two populations:

- **QED 1 (administrative data).** Evaluated participation rates in key federal nutrition programs at the school level in areas targeted by the NKH SIF campaign compared to areas not targeted (either matched to the target areas or for the rest of the state).
- **QED 2 (survey data).** Evaluated individual food security and eating patterns for a sample of students in intervention schools and control schools.

❖ RESEARCH QUESTIONS AND KEY FINDINGS

Three research questions guided the evaluation; Questions 1 and 2 relate to the impact evaluation (quantitative assessment), while Question 3 connects to the implementation evaluation (qualitative studies).

- **Question 1: Is the NKH SIF campaign leading to increased participation in key federal nutrition programs (breakfast afterschool and summer)?**

The administrative data show that participation of free or reduced price (FRP)-eligible students in school breakfast programs improved between the school years 2014–2015 and 2017–2018 in campaign target areas in all states and, except for Michigan, to a greater extent than in the rest of the state.

Improvements in participation in FRP afterschool meals and snacks programs in Florida and Nevada and in FRP summer meals programs in Nevada, Washington, and Wisconsin were observed over the same implementation period. School type (e.g., elementary) and school need (e.g., high FRP eligibility) were the most consistent descriptors of participation rate for FRP meals programs in NKH SIF campaign target areas.

■ **Question 2: Is the NKH SIF campaign leading to decreases in childhood hunger?**

There were no significant differences between the main study intervention and control study results related to food security. However, trends in the data, while they do not contribute to the moderate level of evidence, indicate that the NKH SIF campaign may have had a protective effect on the students in the NKH SIF campaign target area schools that dampened the negative impacts of food insecurity seen in the control schools.

Students in the main study intervention group had significantly improved indicators of meal and snack consumption, specifically related to breakfast, compared to the control group over the intervention period. Following the intervention, the Main study intervention group were consuming healthier foods overall, as indicated by a significant improvement in their Healthy Eating Index scores, and in the proportion of respondents consuming a nutritionally sufficient breakfast.

These statistically significant results indicating increased participation in the programs, increased meal consumption, and improvement in nutrition contribute to the evidence base.

■ **Question 3: How did subgrantees implement their programs, and what changes did they make in response to ongoing monitoring and feedback?**

All subgrantees reported success with at least two of the three key federal nutrition program areas (breakfast, afterschool, or summer), and two felt they were

successful with all three program areas. All but one of the six subgrantees reported that they were unsuccessful implementing strategies to increase participation in school breakfast. Afterschool meals and snacks proved the most challenging, with only three of the six subgrantees reporting successful implementation. Generally speaking, all subgrantees reported degree of success expanding access to summer meals. A variety of contextual factors (e.g., weather, legislative changes, barriers faced by rural communities) impacted implementation for subgrantees. In the 2016–2017 and 2017–2018 school years, subgrantees made changes to implementation based on their ongoing learnings. These included changing program priorities, expanding NKH SIF campaign target areas, adapting strategies, and changing partner relationships to increase effective collaboration.

❖ **KEY UPDATES RELATED TO EVALUATION TIMING/TIMELINE AND BUDGET**

To account for delays in school recruitment and onboarding, and program implementation, we shifted data collection from fall 2016 (baseline) and spring 2018 (follow-up) to the 2016–2017 school year (baseline) and fall 2018 (follow-up).

❖ **KEY CHANGES TO THE PROGRAM OR EVALUATION TEAM**

During the course of the evaluation, there were no key changes to the program or evaluation teams.

❖ **KEY NEXT STEPS FOR EVALUATION EFFORTS**

The NKH campaigns or similar intervention types that are most successful when employing fluid and adaptable approaches may be better assessed with a qualitative evaluation. We recommend future evaluation efforts include explicit program definitions (with parameters for reach and dose) and start dates. Further, ideally, a larger pool of intervention schools would be included in the evaluation to facilitate the search for matching pairs thus enabling a quasi-experimental design to demonstrate program impact. Moreover, fidelity would be better assessed if a fixed (vs. fluid and adaptive) campaign was implemented at each evaluation site (e.g. set number of classes, fixed number and type of contacts).

1. INTRODUCTION

Childhood hunger and food insecurity remain intractable problems in the United States despite efforts by nonprofit organizations, local coalitions, and all levels of government to reduce or eliminate them. In 2018, 11.2 million children in America (15% of children) lived in food-insecure households, and half of these children (6 million) experienced low or very low food security themselves.⁵ This same study found that households with children are more likely to experience food insecurity than those without children: 13.9% of households with children were food insecure in 2018, compared to 10% of households without children.

Children with insufficient food intake are more likely to consume inadequate nutrients for optimal health,⁶ and children experiencing food insecurity have lower micronutrient adequacy⁷ and fruit consumption⁸ than children with access to enough food. Food insecurity has also been associated with obesity in children.⁹ Studies have shown that children in food-insecure households are more likely to experience hospitalization,^{10,11} high blood pressure,¹² asthma,¹³ iron deficiency anemia,^{11,14} decreased bone mineral content (boys only),¹⁵ and overall fair/poor health.^{10,14,16,17} Recent studies have shown that increased Supplemental Nutrition Assistance Program (SNAP) benefits, which are intended to address food insecurity, are associated with a reduction in asthma-related emergency room visits,¹⁸ while decreased benefits are associated with higher odds of food insecurity and fair or poor child health.¹⁹

The health impacts experienced by children living in food-insecure households contribute to an increased risk for developmental delays in cognitive development and mental health,²⁰⁻²³ and these developmental delays or other adverse effects occur before children enter school, putting them at a disadvantage among their peers.²⁴ Children experiencing hunger in kindergarten had lower test scores in reading and math by third grade.² Food insecurity is also associated with persistent attention deficit/hyperactivity disorder in children.²¹ Food insecurity also contributes to health problems in adolescence. Adolescents who have experienced childhood hunger or food insecurity are more likely to suffer from mood, anxiety, and behavior disorders, including depression and suicide ideation, and are also more at risk for substance abuse.^{25,26}

Since 1984, Share Our Strength has been dedicated to addressing hunger and poverty. In 2010, Share Our Strength launched its No Kid Hungry (NKH) campaign to spark transformative change to end child hunger nationwide. NKH campaigns are public-private partnerships that use a combination of grants, program development, program promotion, and technical assistance strategies to increase access to and participation in the federal nutrition programs for children of low-income families.

The NKH campaigns focus on increasing access to key federal nutrition programs operated by the U.S. Department of Agriculture Food and Nutrition Service (USDA-FNS) and listed in **Table 1**. These three programs are targeted by the NKH campaigns because they have higher rates of underutilization compared to some of the other federal nutrition programs. NKH campaigns work to increase program awareness among families and kids and to address barriers to participation. Each NKH campaign sets measurable goals, either throughout the state or in targeted geographies, for increasing participation in child nutrition programs; identifies and implements strategies to achieve those goals; and uses data to track progress and refine tactics. Together with Share Our Strength, NKH campaign partners determine their top programmatic priorities and add or modify strategies depending on their strengths and local environment.

Table 1. Federal Nutrition Programs Focused on by NKH Campaigns

Program	Description	FY 2017 ²⁷ Population Served	FY 2017 Cost (million \$)
National School Breakfast Program (SBP)	Provides low-cost or free breakfast to children aged 18 and under in school.	14.7 million children	\$4,300
Child and Adult Care Food Program (CACFP)/At Risk Afterschool Meals component	Provides meals to school-aged children in afterschool and childcare settings, as well as to adults in adult care settings. The NKH campaigns only work on the afterschool meals component of the program.	4.5 million children and adults	\$3,500
Summer Food Service Program (SFSP)/Seamless Summer Option (SSO)	Provides free meals and snacks to children 18 years and younger when school is not in session.	2.6 million children	\$483

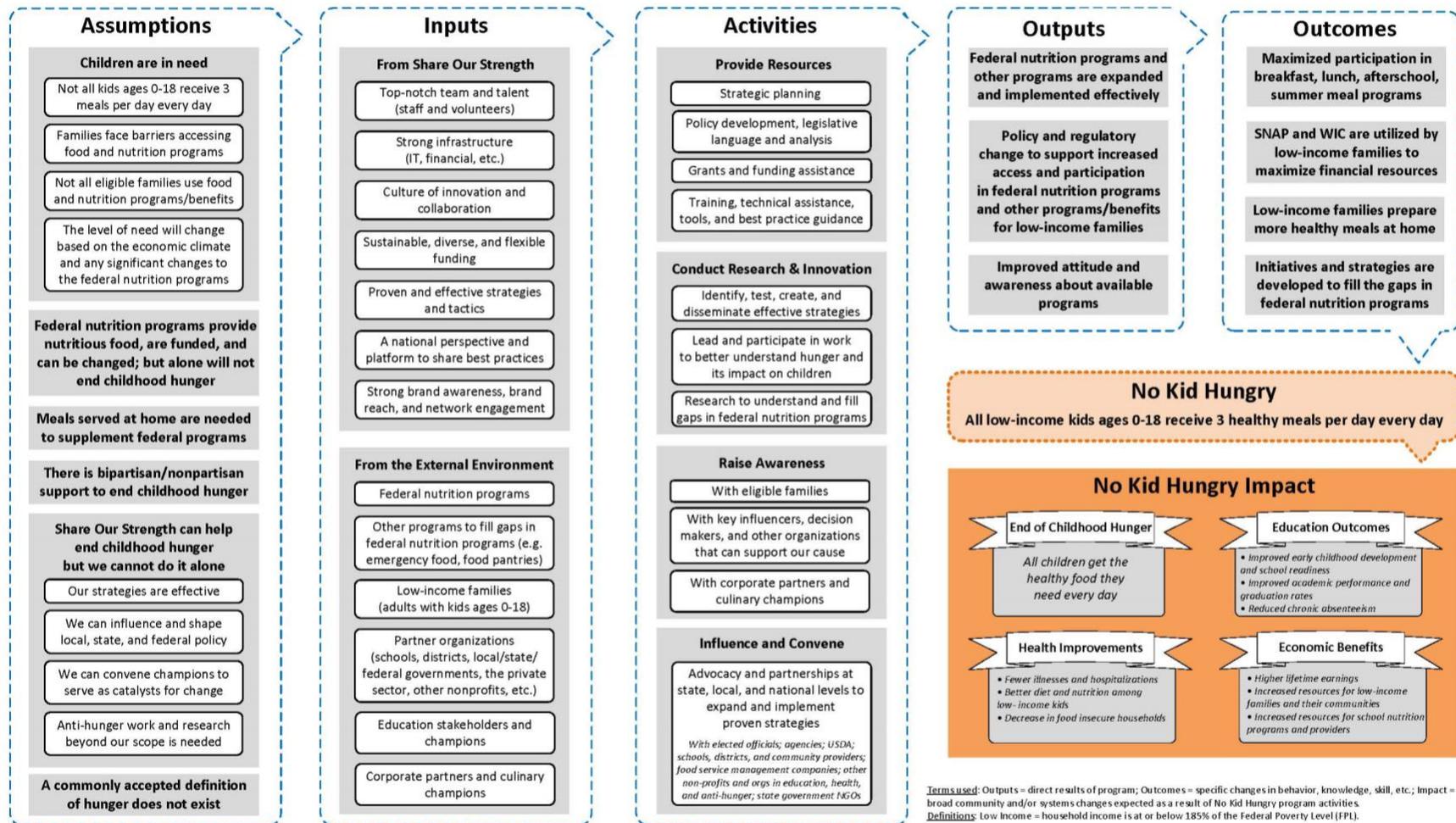
In 2014, the Corporation for National Community Service (CNCS) awarded Share Our Strength a 5-year Social Innovation Fund (SIF) grant to expand their NKH campaigns to communities across the country that were “poised to create impact in the fight to end childhood hunger” and to assess the impact of these campaigns on child hunger. The goal of the SIF program is to identify promising programs and innovative solutions, such as the NKH campaign, and expand these efforts to reach more people through private-sector partnerships. Through the SIF program, CNCS “seeks to support innovations that have advanced beyond the beginning stages, are showing signs of effectiveness, and have the potential for greater scale.”

Through a rigorous open and competitive request-for-proposal process, Share Our Strength selected six subgrantees in different states to expand their existing NKH campaigns or develop new NKH campaigns with the goal of reaching children from low-income families. These subgrantees are Florida Impact, Hunger Task Force (Wisconsin), Texas Hunger Initiative, Three Square Food Bank (Nevada), United Way of King County (Washington), and United Way for Southeastern Michigan. For the NKH SIF grant, these NKH campaigns focused on the three specific child nutrition programs described in Table 1: National School Breakfast Program (SBP), Child and Adult Care Food Program (CACFP)/At Risk Afterschool Component, and Summer Food Service Program (SFSP)/Seamless Summer Option (SSO). In this report, we use the terms “school breakfast,” “afterschool meals and snacks,” and “summer meals” to refer to these programs.

The NKH theory of change (**Figure 1**) describes the key campaign elements of the NKH SIF campaign and serves as a roadmap for how the campaign was intended to achieve impact at multiple levels. Logic model elements include *inputs* or resources needed to implement the campaign; *activities* or best practices for carrying out the campaign; and intended *immediate* (short-term), *mid-term* (intermediate), and *long-term outcomes*. The goal of the campaign, as depicted on the right side of the logic model, is the reduction of food insecurity and child hunger. Note that the NKH theory of change has been updated since the last approved version of the Subgrantee Evaluation Plan. The original version is presented in **Appendix A**.

In general, a theory of change relies on current evidence and the underlying program assumptions.²⁸ The theory of change for the NKH SIF campaign is embedded in key elements of the Share Our Strength conceptual framework. For instance, as described in the framework, providing sustainable and diverse **funding and technical support** to NKH SIF campaign subgrantees **to implement best practices** results in **increased buy-in, participation, and collaboration** of key stakeholders and community awareness to fight child hunger. According to Share Our Strength’s theory of change, these efforts should yield **improved access and participant attitudes and awareness**, leading to an increase in participation in key federal nutrition programs and a reduction in child hunger, which includes fewer children skipping or consuming insufficient meals.

Figure 1. NKH Theory of Change (updated December 2017)



The NKH campaign model is grounded in research that indicates that participation in some federal nutrition programs such as SNAP; the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); and school breakfast with alternative breakfast models (i.e., Breakfast After the Bell [BAB]) has a positive impact on children, including reduced food insecurity and increased nutrient intake.¹⁻⁴ Additionally, Share Our Strength has conducted research and evaluation on the NKH strategies. In deciding to fund Share Our Strength to expand its NKH campaign, CNCS determined that Share Our Strength had preliminary evidence^a showing that NKH strategies increase program participation in federal nutrition programs, which has been shown to reduce food insecurity.

While there is a significant body of evidence demonstrating the benefits of children's participation in federal nutrition programs, there is little research to date that provides moderate evidence^b for strategies such as those implemented in the NKH SIF campaigns. The current program evaluation design sought to generate a moderate level of evidence, thus increasing the rigor and scale of Share Our Strength's evidence for their NKH campaign approach to reducing child hunger.

Subgrantees organized the NKH SIF campaign into several key areas:

- Using school-level data to target districts and schools to expand access to child nutrition programs,
- Working with school districts and individual schools to implement effective breakfast delivery models such as BAB and Breakfast in the Classroom (BIC),
- Developing and building on successful outreach efforts for increasing participation in the Community Eligibility Provision (CEP),^c
- Implementing marketing campaigns and promotion strategies to ensure that kids and families know about programs and how to access them,
- Providing support and technical assistance to schools and organizations to start or expand summer and afterschool meal programs, and
- Creating relationships with new stakeholders to coordinate and expand the scope and reach of their work.

A major focus of the NKH SIF campaigns was to foster and expand multisector collaborations to increase availability and accessibility of programs through strategic planning, community outreach and mobilization, partner expansion, and stakeholder engagement. Throughout the NKH SIF campaigns, subgrantees adapted their efforts based on the context in their local communities and states. Share Our Strength staff provided tailored technical assistance to subgrantee staff and partners through annual planning, bi-monthly check-in calls, quarterly review meetings to assess progress, and in-person site visits. Additionally, Share Our Strength provided access to the NKH Center for Best Practices and media and communication support to include strategic communications plans, branded materials, and templates.

Table 2 describes program activities and campaign target areas for each subgrantee.

^a Preliminary evidence refers to models that "have evidence based on a reasonable hypothesis and supported by credible research findings".²⁹

^b Moderate evidence consists of "evidence from previous studies on the program, the designs of which can support causal conclusions, but have limited generalizability"²⁹

^c CEP allows high-poverty schools to serve free breakfast and lunch to all students without requiring participants to submit applications to qualify for free meals.

Table 2. Program Delivery Summary for each NKH SIF Subgrantee

Program Area	Program Activities	Campaign Target Areas by Year		
		2015-16	2016-17	2017-18
Florida Impact				
School Breakfast	<ul style="list-style-type: none"> Met with school stakeholders to educate them and gain buy-in for switching to alternative breakfast models Supported target school districts in CEP adoption 	Broward, Miami-Dade, Orange, Hillsborough Counties	Broward, Miami-Dade, Orange Counties	Broward, Miami-Dade Counties
Afterschool Meals and Snacks	<ul style="list-style-type: none"> Provided outreach and technical assistance to new sites and sponsors to expand the number of afterschool meals sites Focused on increasing CACFP supper participation rather than National School Lunch Program (NSLP) snacks 			
Summer Meals	<ul style="list-style-type: none"> Increased participation by partnering with organizations, such as local housing authorities and WIC clinics, to add meal sites Partnered with other organizations to provide enrichment activities at sites, including holistic health services, physical activities, reading and police programs Leveraged state agency marketing, Summer BreakSpot, to raise awareness of the program and available sites 			
Hunger Task Force (Wisconsin)				
School Breakfast	<ul style="list-style-type: none"> Engaged school leaders at the district and school levels to educate and implement BAB Provided equipment and technical assistance to schools implementing BAB Encouraged eligible schools to apply for CEP Built parent and caregiver support for breakfast as a learning strategy 	Milwaukee, West Allis/ West Milwaukee, Cudahy School Districts	Milwaukee, West Allis/West Milwaukee, Cudahy, Green Bay, Sheboygan, Waukesha School Districts	Milwaukee County, City of Waukesha, City of Green Bay & City of Sheboygan
Afterschool Meals and Snacks	<ul style="list-style-type: none"> Educated afterschool providers not participating in CACFP on the program requirements and encouraged them to participate 			
Summer Meals	<ul style="list-style-type: none"> Established new sites based on need and gaps in coverage Expanded partner collaboration in new campaign target areas 			
Texas Hunger Initiative				
School Breakfast	<ul style="list-style-type: none"> Raised awareness and partnered with school leaders and local FNS to implement BAB models Provided equipment and technical assistance to schools implementing BAB 	<i>Dallas Metroplex:</i> Dallas, Garland, Irving, Mesquite Independent School Districts (ISDs) <i>Southeast Texas:</i> Houston, Beaumont, Pasadena, Port Arthur, Spring ISDs <i>Heart of Texas:</i> La Vega, Marlin, Temple, Waco ISDs		
Afterschool Meals and Snacks	<ul style="list-style-type: none"> Trained and educated afterschool meal site coordinators and sponsors Provided support to new sponsors applying for and implementing the programs 			
Summer Meals	<ul style="list-style-type: none"> Conducted outreach focused on retaining current meal sponsors and increasing participation at existing sites Provided support to new sponsors applying for and implementing the summer meals program Conducted kick-off events 			

(continues)

Program Area	Program Activities	Campaign Target Areas by Year		
		2015-16	2016-17	2017-18
Three Square Food Bank (Nevada)				
School Breakfast	<ul style="list-style-type: none"> Supported schools in implementing BAB, via training and incentives, in response to new statewide BAB law (SB 503) Led Powered by Breakfast marketing campaign to raise awareness of breakfast and reduce stigma Secured BAB pilot in schools with 60-69% FRP-enrolled students 	Clark County		
Afterschool Meals and Snacks	<ul style="list-style-type: none"> Implemented "Supper Club," an umbrella model, to provide meals to additional children not participating in afterschool programs Three Square is a sponsor of CACFP sites as well as a food vendor, helping to streamline meal service 			
Summer Meals	<ul style="list-style-type: none"> Started "Meet Up & Eat Up," a summer meals marketing campaign to raise awareness and increase participation Provided nutrition education at selected sites Added mobile meal routes 			
United Way of King County (Washington)				
All	<ul style="list-style-type: none"> Launched the Fuel Our Future School Nutrition Hub Model of placing AmeriCorps member in targeted schools Developed relationships, best practices and success stories to ultimately expand work outside of King County in future years 	King County		
School Breakfast	<ul style="list-style-type: none"> Convened breakfast workgroup to focus on implementing CEP in eligible and near-eligible schools then statewide once requirement passed 			
Afterschool Meals and Snacks	<ul style="list-style-type: none"> Worked directly with afterschool meal sponsors to identify opportunities for site expansion. Worked with individual schools to promote existing afterschool meal sites 			
Summer Meals	<ul style="list-style-type: none"> Built capacity of community-based organizations and schools to deliver summer meals through grants and on-site technical assistance Developed tools and best practices for marketing and outreach 			
United Way for Southeastern Michigan				
School Breakfast	<ul style="list-style-type: none"> Hired breakfast consultants (coaches) to educate FNS on switching to BAB models, and provide technical assistance to target districts Created marketing collateral for breakfast outreach efforts 	Genesee, Ingham, Kent, Macomb, Oakland, Wayne Counties		
Afterschool Meals and Snacks	<ul style="list-style-type: none"> Encouraged sponsors to participate in both afterschool and summer meals programs to ensure year-round access to meals 			
Summer Meals	<ul style="list-style-type: none"> Conducted outreach to increase awareness of summer meals program Launched mobile app to count meals at summer meal sites Implemented comprehensive "Meet Up & Eat Up" marketing campaign to raise awareness and increase participation 			

2. THE PROGRAM EVALUATION PLAN

Share Our Strength contracted RTI International to evaluate the effectiveness of the NKH SIF campaign and contribute to the evidence base by identifying successful strategies to reduce childhood hunger. We sought to answer three research questions:

- **Question 1:** Is the NKH SIF campaign leading to increased participation in key federal nutrition programs?
- **Question 2:** Is the NKH SIF campaign leading to decreases in childhood hunger?
- **Question 3:** How did subgrantees implement their programs, and what changes did they make in response to ongoing monitoring and feedback?

To do so, we conducted a mixed method evaluation consisting of two main components—a quantitative impact evaluation and a qualitative implementation evaluation.

❖ **IMPACT EVALUATION.** This quantitative assessment examined program outcomes and effectiveness by drawing on two quasi-experimental designs (QEDs) intended to address research questions 1 and 2:

- **QED1: Evaluation of USDA administrative data** (i.e., federal nutrition program participation data collected by states for each school year; these data are a census including all students) combined with national sociodemographic data (e.g., urban/rural designations and school-based demographics from National Center for Education Statistics [NCES], and percent Hispanic from the American Community Survey, and citizenship estimates from the 2010 Census), and
- **QED2: Evaluation of survey data** from interviews and diet recalls (primary data collection). The primary data collection portion consisted of two main components:
 - **Main Study:** Interviews (including 24-hour diet recalls) with independent random samples of students from three NKH SIF campaign intervention schools and three matched control schools at three subgrantee sites at baseline (pre-implementation) and follow-up (post-implementation); designed to provide a moderate-evidence evaluation of the impact of NKH SIF campaign activities on reduction in child hunger.
 - **Ancillary Study:** Interviews (including 24-hour diet recalls) with independent random samples of students from three NKH SIF campaign intervention schools from each of the three subgrantee sites not included in the main study; used to understand what strategies worked and what did not, for whom and under what conditions.

The main and ancillary studies were largely methodologically identical, except that the main study used a control group and did not attempt to follow the same kids at baseline and follow-up, while the ancillary study did not use a control group and instead relied on a pre-post design in which we tried to follow the same kids over time to the extent possible.

Reduction of childhood hunger was assessed using the following measures:

- Increased participation in federal nutrition programs,
- Improvement in food security,
- Increased meal and/or snack consumption, and
- Improvement in overall dietary intake.

❖ **IMPLEMENTATION EVALUATION.** This component, intended to address research question 3, consisted of contextualizing the quantitative findings of the impact evaluation and understanding how the campaign implementation unfolded, drawing on two sources of information:

- **Subgrantee Case Studies:** These were conducted at two time points: baseline (spring 2016) and follow-up (fall 2018). The case studies examined the implementation of NKH SIF

campaigns and the circumstances in which they unfolded. Case studies involved collecting subgrantee documentary evidence and conducting semi-structured, in-depth interviews with key program staff, community partners, and members of the Share Our Strength NKH SIF leadership team. Interviews focused on gathering information about aspects of each NKH SIF campaign's design, development, and implementation.

- **Subgrantee Activity Trackers:** These were collected quarterly starting in the second quarter of the 2015–2016 school year (Oct–Dec 2015) and ending in the 4th quarter of the 2017–2018 school year (Apr–Jun 2018). An activity tracker template in Microsoft Excel was provided to subgrantees to record meaningful stakeholder interactions that aligned with NKH campaign strategies to increase participation in school breakfast, afterschool meals and snacks, and summer meals. These quarterly activity trackers provided a more in-depth understanding of the strategies the subgrantees employed across programs over the course of the multi-year NKH SIF campaign.

Table 3 summarizes the overarching and secondary evaluation questions addressed in the program evaluation and identifies the study component we used to address each question. Table 3 also details the methods and indicators for addressing each question. **Section 3** provides data sources and specific methods for analysis of the data from each component, as well as changes from the Subgrantee Evaluation Plan (SEP; provided in **Appendix A**).

Table 3. Overview Matrix for Impact and Implementation Evaluation Questions

Evaluation Component	Question Function	Indicator(s)	Data Sources^a	Data Analysis
Question 1: Is the NKH SIF campaign leading to increased participation in key federal nutrition programs?				
Have campaign strategies increased participation in school breakfast, afterschool meals and snacks, and summer meals?				
Impact: QED1	Confirmatory Exploratory	Increased participation rates in federal nutrition programs from baseline to follow-up	Admin. data	Comparison of key variables at baseline and follow-up
Do school characteristics describe differences in participation in school breakfast, afterschool meals & snacks, and summer meals?				
Impact: QED1	Exploratory	Increased program-level participation rates in federal nutrition programs from baseline to follow-up	Admin. data Sociodemo. data	Comparison of key variables at baseline and follow-up
Do participant characteristics affect participation in school breakfast, afterschool meals and snacks, and summer meals?				
Impact: QED2	Exploratory	Increased individual participation rates in federal nutrition programs from baseline to follow-up	Survey data	Student-level regression
Does participation in one federal nutrition program support participation in other federal nutrition programs?				
Impact: QED2	Exploratory	Individual participation rates in multiple federal nutrition programs	Survey data	Correlations between changes in key variables
Question 2: Is the NKH SIF campaign leading to decreases in childhood hunger?				
Do study participants influenced by campaign strategies have improved food security?				
Impact: QED2	Confirmatory Exploratory	Reduction in food insecurity scores among students	Survey data	Comparison of key variables at baseline and follow-up
Do study participants influenced by campaign strategies consume more meals and/or snacks?				
Impact: QED2	Exploratory	Increased number of meals and/or snacks consumed per day or week; Increased number of meals and/or snacks eaten at school; Increased proportion of children consuming a nutritionally sufficient breakfast	Survey data	Comparison of key variables at baseline and follow-up
Do study participants influenced by campaign strategies consume healthier foods?				
Impact: QED2	Exploratory	Improved quality of nutritional intake as measured by the Healthy Eating Index; Increase in consumption of foods in healthy food groups	Survey data	Comparison of key variables at baseline and follow-up
Question 3: How did subgrantees implement their programs, and what changes did they make in response to ongoing monitoring and feedback?				
Implementa- tion	NA	Fidelity to NKH SIF campaign design and intentional revisions to NKH SIF campaign based on ongoing monitoring and evaluation, key informant descriptions of exogenous factors	Case studies Activity trackers	Content analysis of documents and interview notes

^a Data Sources Key: *Admin. data*: USDA FNS administrative program participation data; *Sociodemo. data*: National sociodemographic data from NCES, the American Community Survey, and the 2010 Census; *Survey data*: Interviews with parents and students in nine NKH SIF campaign schools at baseline and follow-up; included questions about sociodemographic characteristics, federal nutrition program participation, dietary behaviors, food security, 24-hour dietary recall, & 7-day food frequency questionnaire; *Case studies*: Key informant interviews with subgrantee staff and their partners and NKH SIF staff; *Activity trackers*: Recording of activities by program area by subgrantees.

3. THE PROGRAM EVALUATION DESIGN

Note: As might be expected over the course of a multi-year study, to effectively conduct the evaluation, we needed to be responsive to program implementation changes, evaluation data collection implementation issues, budgetary constraints, and evolving organizational priorities. Thus, while maintaining a design that facilitated collection of moderate evidence, we modified aspects of both our implementation and evaluation approaches. Changes of note are offered at the end of the Impact Evaluation Design and Implementation Evaluation Design sections (**Sections 3.1** and **3.2**, respectively).

3.1 Impact Evaluation Design

Assessing program outcomes and effectiveness with quantitative assessments is crucial for the SIF, Share Our Strength, and subgrantees to generate evidence about the relationship between NKH SIF campaigns and child hunger. The intervention under evaluation was the NKH SIF campaign implementation to maximize participation in the federal nutrition programs (particularly school breakfast [SBP], afterschool meals and snacks [CACFP, NSLP], and summer meals [SFSP/SSO]). The primary aim of the impact evaluation was to test whether the intervention led to decreases in child food insecurity and hunger among children eligible for free or reduced price (FRP) school meals.

As described briefly in **Section 2**, the impact evaluation consisted of two QEDs: an evaluation of administrative and sociodemographic data, and a primary data collection effort and evaluation of the resultant survey data. These are described in the following sections, followed by a summary of changes to the SEP for the impact evaluation.

▲ **QED1: Evaluation of Administrative and Sociodemographic Data**

Administrative program participation data from states with NKH SIF campaigns were collected from the school year before implementation of the NKH SIF campaigns (i.e., 2014–2015 school year) and from school years after implementing the interventions (2017–2018 school year and fall semester of 2018–2019 school year) for all schools within NKH SIF campaign target areas and the rest of the state. Sociodemographic data from various sources were also collected and matched, to the extent possible, to the administrative participation data.

❖ **Data Collection**

As required by the federal government, school districts and other organizations are required to collect participation data on behalf of USDA-FNS for each school or site implementing the child nutrition programs. These data are not a sample, but reflect a census of all children participating in these nutrition programs.

All subgrantees had relationships with county or state agencies responsible for collecting program participation data and already had verbal agreements or written Memoranda of Understanding in place to receive this data on a monthly basis. We requested specific variables from each subgrantee, and they provided monthly administrative program participation data at the school or site level for school breakfast (SBP), school lunch (NSLP), afterschool meals and snacks (NSLP and CACFP), and summer meals (SFSP/SSO), with two exceptions:

- Florida's 2014–2015 NSLP snack data were total-year participation data rather than monthly participation data
- Wisconsin's administrative data for all programs and years were at the school district level, not the school level; as a result, we could not match sociodemographic data to these participation data to evaluate the impact of school characteristics on participation.

Share Our Strength and RTI worked together to manage and, when necessary, clean the data. All data files received included site and sponsor information, meal claim totals, service days, and claim month and year. Breakfast and lunch data files also included free, reduced-price, and total enrollment counts. When necessary, July NSLP meal data were used as a proxy for missing SSO meal claims. The data from all subgrantees was formatted and collated into one analysis data file for each meal program for each school year. For the breakfast and lunch analysis files, we limited the data to schools that had 9 months of data in both school years to ensure accurate comparisons between the time periods. We matched schools in both school years by site name. We did not limit data in the afterschool or summer analysis files in the same way. An investigation into the data in those programs showed that too much data would be deleted, plus it is common for there to be changes in site locations over time in these two programs.

Data Analysis

Using the USDA program participation data, we compared participation in school breakfast, school lunch, and afterschool meals and snacks in the school year before implementation of the NKH SIF campaigns (i.e., 2014–2015 school year) with data from school years after implementing the interventions (2017–2018 school year and fall semester of 2018–2019 school year) for all schools within NKH SIF campaign target areas and the rest of the state (see subsection on Changes from the SEP at the end of **Section 3.1**). Because none of the campaigns were focused on increasing participation in school lunch, the data for that program was analyzed for contextual purposes. The same comparison was done for summer meals participation using Summer 2014 (or Summer 2015 if statewide data for 2014 were unavailable) and Summer 2018. Both Texas and Florida experienced severe hurricanes in the fall semester of the 2017–2018 school year. To ensure that the data were not skewed by temporary changes in participation resulting from the aftermath of these storms (e.g., temporary and permanent school closures), we limited data from both school years for breakfast and lunch to November through May.

For each evaluation question, four possible dependent variables were evaluated: overall number of meals served, average daily participation (ADP), participation rate based on FRP enrollment, and participation rate based on FRP school lunches served. ADP was calculated as the number of meals served per month divided by the number of service days per month; if there were no data for number of service days, we used 18.5 days per month as a proxy. Participation rate based on FRP enrollment was defined as the number of FRP meals served divided by FRP enrollment. Participation rate based on FRP school lunches was defined as the number of FRP meals served divided by the number of FRP school lunches served. For participation rate based on school lunches, when September and October data were excluded from both the numerator (i.e., FRP breakfasts, afterschool meals, or summer meals served) and the denominator (i.e., FRP lunches served).

We chose to present participation rate using FRP school lunches served in this report. Both the total number of meals served and ADP could be influenced by enrollment changes, while the two participation rates were less influenced by changes in enrollment. However, the participation rate based on FRP enrollment could not be calculated if school enrollment information was missing (i.e., we had the number participating for the numerator, but not the total enrolled for the denominator); thus, we chose to present results of participation rate based on FRP school lunches, which had greater consistency and reliability than the enrollment data.

We did not conduct significance testing on these comparisons, because the participation data are not a sample. Significance testing is designed to evaluate whether observed differences in randomly sampled data might be due to chance. Because these data are a census of the entire student population in the relevant schools or study areas, there is no sampling or potential sampling error to assess. Although there is some missing data in these data sets, we have chosen measures that minimize the use of more frequently missing variables, and the missing data do not reflect any sort of random sampling process. Thus, we cannot apply significance testing for that purpose without undermining the theory on which significance testing is based. Thus, we can conclude that observed differences are real, and not due to random error. Whether those

differences are *meaningful* in the context of these data and this field of study is a subjective question that is up to the interpretation of the reader.

To select comparison areas for NKH SIF campaign target areas, we selected areas with similar demographic characteristics based on race, ethnicity, urbanicity, and poverty status. When campaign target areas were cities or counties, we used 2014 American Community Survey estimates for race, ethnicity, and poverty status. Census 2010 estimates were used for estimates of urbanicity. When campaign target areas were school districts, we pulled state school district-level data. For each city, county, or school district, we used a distance function to determine the location most closely matched with the campaign target area. We allowed repeat matches among NKH SIF campaign target areas and matched non-campaign target areas. The resulting matches are shown in **Table 4**.

We compared dependent variables at baseline and follow-up within NKH SIF campaign target areas, within matched non-campaign target areas in the same state, and to the rest of the state. Matched non-campaign target areas were chosen using 2014 American Community Survey data for percent Hispanic, percent Black, and percent below poverty, and 2010 Census data for percent rural. Specifically,

- *School need level* was determined by percent FRP enrolled. Less than 40% was considered low eligibility, 40–59% was considered middle eligibility, and greater than or equal to 60% was identified as high eligibility. This categorization was based on the way that Share Our Strength targets schools according to need level.
- *School type (elementary, middle, or high school)* was either already included in the meal claim data from the state agency or obtained from NCES data by Share Our Strength.
- *Hispanic/Latino population* was determined using NCES 2016–2017 school-level enrollment information. Based on a review of the distribution of the data, schools with greater than or equal to 30% Hispanic population were classified as High Hispanic Population. These data were not available for a sufficient number of sites in Nevada to evaluate afterschool or summer meals.
- *Immigrant population levels* were determined using five-year estimates from the 2017 American Community Survey. Based on a review of the distribution of the data, ZIP codes were classified as high immigrant population if more than 5% of individuals were non-citizens. These data were not available in Florida for a sufficient number of schools, afterschool meals and snacks sites, or summer meals sites to evaluate any program, nor were they available in Nevada for a sufficient number of afterschool meals and snacks sites or summer meals sites to evaluate either of those programs.
- *Urbanicity* was determined differently for breakfast vs. afterschool meals and snacks and summer meals:
 - For breakfast participation by urbanicity, we used the NCES 2016–2017 school-level classification of rural/urban. Schools classified as “Rural: Fringe,” “Rural: Distant,” or “Rural: Remote” were all classified rural for the data evaluation. All other locales were classified urban. These data were not available for Nevada, so breakfast could not be evaluated with respect to urbanicity there.
 - For afterschool meals and snacks and summer meals participation by urbanicity, the NCES classification of rural/urban did not provide enough coverage of afterschool or summer sites (which are not necessarily schools), so we used 2010 Census data on the number of housing units within each ZIP code that were urban. Based on a review of the distribution of the data, ZIP codes were classified as urban if more than 60% of the housing units in that ZIP code were urban. These data were not available in Florida to match a sufficient number of afterschool meals and snacks and summer meals sites, so those programs could not be evaluated with respect to urbanicity there.

Table 4. NKH SIF Campaign Target Areas and Matched Non-campaign Target Areas

Program	NKH SIF Campaign Target Areas	Matched Non-campaign Target Areas	
Florida Impact			
All Programs	Broward County	Palm Beach County	
	Hillsborough County	Palm Beach County	
	Miami-Dade County	Osceola County	
	Orange County	Palm Beach County	
Hunger Task Force (Wisconsin)			
Breakfast	Cudahy School District	South Milwaukee	
	Green Bay School District	Menasha Joint	
	Milwaukee School District	Racine Unified	
	Sheboygan School District	Manitowoc	
	Waukesha School District	Greenfield	
	West Allis–West Milwaukee School District	Kenosha	
Afterschool/ Summer	Brown County	Dane County	
	Milwaukee County	Racine County	
	Sheboygan County	Calumet County	
	Waukesha County	Winnebago County	
Texas Hunger Initiative			
Breakfast	Heart of Texas-Waco ISD	San Angelo ISD	
	Heart of Texas-Marlin ISD	Keene ISD	
	Heart of Texas-La Vega ISD	Needville ISD	
	Heart of Texas-Temple ISD	Frenship ISD	
	Metroplex-Dallas ISD	Houston ISD	
	Metroplex-Garland ISD	Plano ISD	
	Metroplex-Irving ISD	Spring Branch ISD	
	Metroplex-Mesquite ISD	Clear Creek ISD	
	Southeast Texas-Beaumont ISD	Tyler ISD	
	Southeast Texas-Port Arthur ISD	Frenship ISD	
	Southeast Texas-Pasadena ISD	Plano ISD	
	Southeast Texas-Spring ISD	Leander ISD	
	Afterschool/ Summer	Heart of Texas-Bellmead, TX	Bryan City, Texas
		Heart of Texas-Marlin, TX	Hempstead City, Texas
Heart of Texas-Temple, TX		Milford Town, Texas	
Heart of Texas-Waco, TX		Cleveland City, Texas	
Metroplex-Dallas, TX		Houston City, Texas	
Metroplex-Dallas County		Harris County	
Southeast Texas-Beaumont, TX		Clarksville City, Texas	
Southeast Texas-Pasadena, TX		Lorenzo City, Texas	
Southeast Texas-Port Arthur, TX		Windemere CDP, Texas	
Southeast Texas-Spring City, TX		Columbus City, Texas	
Three Square (Nevada)			
All Programs	Clark County	Washoe County	
United Way of King County (Washington)			
All Programs	King County	Pierce County	
United Way for Southeastern Michigan			
All Programs	Genesee County	Kalamazoo County	
	Ingham County	Kalamazoo County	
	Kent County	Washtenaw County	
	Macomb County	Washtenaw County	
	Oakland County	Washtenaw County	
	Wayne County	Washtenaw County	

▲ QED2: Primary Data Collection and Analysis (Survey Data)

The main study was designed to provide moderate evidence for the effectiveness of the NKH SIF campaigns in decreasing child hunger. A full randomized control trial was not feasible, so the study took the form of a quasi-experimental design, which permitted us to estimate the impact of the intervention on the target population. The impact evaluation design involved baseline and follow-up data collection in independent random samples of students from three NKH SIF campaign intervention schools and three matched control schools, although the school themselves were not randomly selected.

This evaluation was designed to determine whether there is moderate evidence for the efficacy of the NKH SIF campaign implementation to reduce childhood hunger. That was achieved through statistical controls for selection bias and by reducing the influence of internal factors by matching the intervention and control schools. However, one limitation of the study design was that there are many stages between campaign implementation and reduced food insecurity that were not controlled for (see the stages in the Outputs and Outcomes columns of Figure 1), which means the study cannot *prove* causality or the efficacy of the NKH SIF campaign implementation. While we worked to address threats to internal validity in the design of the study mainly by selecting control groups using propensity scores, we also employed standard instrumentation at the pre and post data collection periods. The main threats to internal validity were the uneven implementation of the program and the imperfect matching between control and treatment schools. We can, however, evaluate the effectiveness of the intervention (NKH SIF campaign implementation) in decreasing hunger in the intervention population: i.e., was there a change in the key indicators over the time period of program implementation that can plausibly be ascribed to the program? We were able to examine effectiveness by looking at change over time, no matter the source of the change. Because the program was in effect during the data collection time period, we assume that the intervention played a role. However, we are not able to definitively conclude that the program caused the change.

As this study is an effectiveness study, the focus was on the ultimate measure of success, that is, a reduction in our hunger measures. It is not necessary to know whether the study participants participated in the nutrition programs implemented in their schools. This evaluation was designed to provide moderate evidence of the effectiveness of the NKH SIF campaign implementation as per the SIF Evidence Framework Definition²⁹ under “real-world” conditions, in which participation in the nutrition programs will not be 100%.

To provide moderate evidence for the efficacy of the NKH SIF campaigns, we conducted interviews with independent random samples of students from three NKH SIF campaign intervention schools and three control schools at baseline (pre-implementation) and follow-up (post-implementation); we refer to this part of the study as the main study. A second component of the impact evaluation was an ancillary study to look at pre-post changes in a cohort of students randomly selected at baseline in one NKH SIF campaign school from each of the three subgrantee intervention areas not included in the main study. The ancillary study did not have matched control schools. Thus, we conducted data collection at a total of nine schools, three main study intervention schools, three main study control schools, and the ancillary study intervention schools.

We compared outcomes of study participants in the three main study implementation schools with outcomes of study participants in the three matched control schools. Differences in outcomes between these two groups of study participants provided evidence of the effects of the NKH SIF campaign implementation, because the student populations in the main study intervention and control groups were matched to have similar characteristics (urbanicity, population density, enrollment, FRP school lunch eligible, race, and ethnicity). We also looked at changes over time in participants in all intervention schools from the main study and ancillary study combined, but we cannot compare these changes to those seen in participants in the control school students, because the ancillary schools did not have matched control schools.

We used survey procedures included in SUDAAN for statistical estimation and testing. This allowed the clustering nature of the students within school to be accounted for in the analysis. For descriptive statistics (including means, proportions, and standard errors), PROC DESCRIPT was used. T-tests were used for pairwise comparisons of the main study intervention and control at each time point, as well as pairwise comparisons of each site and intervention group between both time points. Distributions were calculated using PROC CROSSTAB; chi-square tests were used to compare distributions between time points.

Regression analyses were limited to linear regression using PROC REGRESS. For the student-level regression, we analyzed outcome measures of the number of days a child eats specific types of eating occasions. Due to the limitations of sample size by site and objective, we modeled by intervention group. Covariates in the model included an interaction between main study groups and time period, along with variables related to household and parental characteristics, enrollment, and race and ethnicity. Inclusion of these variables adjusted estimates to help control for differences observed in the student-level data and enable comparisons.

❖ Sample Design

The main study evaluation used a between-groups design with control groups formed by matching. This design is characterized by having groups, in this case schools, allocated to study arms or conditions. The presence of different groups in each study arm and different members in each group gives this design a nested or hierarchical structure for the data. This type of design often involves a small number of groups assigned to each study arm. Thus, the population elements are clustered in this type of design. In our case, children are clustered within schools and are more likely to be homogenous socio-demographically than children would be if they were selected across multiple schools..

To ensure a moderate level of evidence, we selected two cross-sectional samples in the main study. We drew the first sample from students at NKH SIF campaign intervention schools and matched control schools in fall 2016 before beginning the NKH SIF campaign (baseline) and the second from students in the same schools in fall 2018 during or after the NKH SIF campaign (follow-up); see subsection on Changes from the SEP at the end of **Section 3.1**.

We performed our power calculations to account for a minimum sample size of 30 children per school, or a total of 180 across the three intervention and three control schools (90 students per arm). This target sample size, of 180 total students at each timepoint, provided approximately 90% power, meaning we expect with 90% certainty to be able to detect a difference between children in each of the two school groups (intervention vs. control) if there is an actual difference to be found. Specifically, we powered this study to find a difference as small as 1.1 meal/snack consumed per day between students at intervention schools and students at control schools at the end of the 18-month study period. This sample size estimate accounts for the intra-class correlation (ICC), which measures the degree of similarity among individual responses within a school. With measurements from m students in each school, the number of schools, g , needed for a power of $(1 - \beta)$, with two-tailed type I error risk of α and effect size $\Delta = (\mu_1 - \mu_2)/\sigma$, the mean outcome difference between groups, is given by the equation:

$$g = 4[(1+(m-1)ICC)/m] \times (Z_{1-\beta} + Z_{1-\alpha/2})^2 \times (1/\Delta)^2$$

where $Z_{1-\beta}$ is the 100 $(1 - \beta)$ th percentile of the standard normal distribution (e.g., 1.28 for a power of 90%), and $Z_{1-\alpha/2}$ is the 100 $(1 - \alpha/2)$ th percentile (e.g., 1.96 if $\alpha = 0.05$ two tailed). If we obtain measurements on students from $g = 6$ schools, and if the true ICC is 0.01, $m = 30$ students per school are needed to have at least 90% power to detect a moderate effect size of 0.55. This “moderate” effect size translates to detecting a mean difference of 1.1 meals or snacks consumed per day between groups, assuming that the standard deviation of meals/snacks consumed per day is 2.

We sampled one intervention school for each of three subgrantees in the main study. The schools were selected from all eligible elementary schools (i.e., that were unaffected by the intervention at the time of selection but were expected to be exposed to the NKH SIF campaign intervention by the time of follow-up data collection).

We selected three matching schools (one per subgrantee) to serve as counterfactuals in the main study. For the control group sample, we did our best to match each intervention school with schools from areas that are geographically proximate and similar with respect to urban density and demographic characteristics.

We identified control group schools that were not likely to be affected by any of the NKH SIF campaigns. We tried to select control schools that were not in a NKH SIF campaign target area but were as similar as possible to the intervention school with respect to key school characteristics such as type (elementary), size, ethnic/racial diversity, and FRP school meal eligibility. These matching criteria have been used in other evaluation of interventions operating at the school level.^{30,31} We searched first in areas that were close geographically to the target area, then in areas that were similar to the target area. In some situations, for reasons noted elsewhere, we had to cast a wider geographical net. Once we found a similar area, we then searched for a similar school in that area. While we strove to match our intervention schools with controls on all characteristics named above, it was not possible. We were limited by the existence of schools that matched on all characteristics as well as the willingness of selected schools to participate. Thus, compromises were required within the matching criteria. As needed, we statistically controlled for as many of these differences as possible to ensure that the differences observed resulted from the intervention. We implemented the matching at the time of the baseline survey. The variables used for matching were included in the regression model in which the student-level outcome was predicted as a function of baseline outcome. The covariates included enrolment, number of adults and children in the household, as well as race and ethnicity among others.

To minimize selection bias, we calculated propensity scores to assess the probability that schools with select sociodemographic characteristics would be assigned to the intervention group as opposed to the control group. When matching schools, the use of propensity scores allowed us to balance the covariates selected for matching. We matched intervention and control schools with similar propensity scores.

Table 5 compares characteristics of the intervention and control schools for the main study; the matching is discussed briefly following the table.

Table 5. Comparison of Main Study Intervention and Control Schools

Subgrantee, Characteristics	Intervention	Comparison	Normalized Difference
Florida Impact			
<i>School Name</i>	Broadview Elementary	Ensley Elementary	—
<i>County, State</i>	Broward County, FL	Escambia County, FL	—
<i>Urban/Rural Status</i>	Urban	Suburban	—
<i>City</i>	North Lauderdale	Pensacola	—
<i>Population Density (per square mile)</i>	8,937	2,304	—
<i>Median Household Income (county)</i>	\$42,140	\$45,727	—
<i>School Characteristics</i>			
<i>Enrollment</i>	1,038	499	2.49
<i>FRP Lunch Eligible (%)</i>	87	82	0.43
<i>White (%)</i>	5	25	-1.97
<i>Hispanic/Latino (%)</i>	45	15	-0.37
<i>Black (%)</i>	45	50	-0.34
<i>Propensity score</i>	0.084	0.001	—

(continues)

Subgrantee, Characteristics	Intervention	Comparison	Normalized Difference
Hunger Task Force (Wisconsin)			
<i>School Name</i>	Victory Elementary	Bose Elementary	—
<i>County, State</i>	Milwaukee County, WI	Kenosha County, WI	—
<i>Urban/Rural Status</i>	Urban	Urban	—
<i>City</i>	Milwaukee	Kenosha	—
<i>Population Density (per square mile)</i>	6,242	4,196	—
<i>Median Household Income (county)</i>	\$35,186	\$42,274	—
<i>School Characteristics</i>			
<i>Enrollment</i>	549	381	0.71
<i>FRP Lunch Eligible (%)</i>	81	69	0.58
<i>White (%)</i>	35	53	-0.75
<i>Hispanic/Latino (%)</i>	31	24	0.32
<i>Black (%)</i>	16	17	-0.03
<i>Propensity score</i>	0.305	0.512	—
United Way for Southeastern Michigan			
<i>School Name</i>	Pontiac Academy for Excellence	Timberland Academy	—
<i>City</i>	Pontiac	Muskegon	—
<i>County, State</i>	Oakland County, MI	Muskegon County, MI	—
<i>Urban/Rural Status</i>	Urban	Urban	—
<i>Population Density (per square mile)</i>	2,980	2,702	—
<i>Median Household Income (county)</i>	27,632	25,989	—
<i>School Characteristics</i>			
<i>Enrollment</i>	548	641	-0.44
<i>FRP Lunch Eligible (%)</i>	91	95	-0.19
<i>White (%)</i>	8	18	-0.32
<i>Hispanic/Latino (%)</i>	22	20	0.14
<i>Black (%)</i>	68	55	0.39
<i>Propensity score</i>	0.056	0.051	—

- **Florida Impact:** We selected Broadview Elementary in North Lauderdale, Broward County, Florida, as the intervention school and Ensley Elementary in Pensacola, Escambia County, as the control school. The cities have similar median household income levels, although Pensacola's population density is 25% of North Lauderdale's population density. The largest difference when comparing the two schools' characteristics is in the total enrollment, with Broadview being twice as large as Ensley. The African American proportions and the FRP eligibility rates are similar, both being relatively high. Proportions of White and Hispanic/Latino differ markedly, with Broadview having a very low proportion White and Ensley a very low proportion Hispanic/Latino. We compensated for the lack of perfect matching by including the matching variables as covariates in the student-level analysis.
- **Hunger Task Force (Wisconsin):** We selected Victory Elementary in Milwaukee, Wisconsin, as the intervention school, and Bose Elementary in Kenosha County, Wisconsin, as the control school. The cities are similar with respect to population density and median household income. The specific schools are similar with respect to most of the matching criteria. The largest differences occur for proportion White (with Bose having a higher proportion of White students) and total enrollment (with Victory have the higher enrollment). The two schools are relatively similar with respect to FRP eligibility rates and proportion minority (Hispanic/Latino and Black). We compensated for the lack of perfect matching by including the matching variables as covariates in the student-level analysis.

- **United Way for Southeastern Michigan:** We selected Pontiac Academy for Excellence in Oakland County, Michigan, as the intervention school, and Timberland Academy in Muskegon County as the control school. The counties have very similar total population levels, population densities, median household income levels, and race/ethnicity breakdowns.

For the ancillary study, we followed a cohort of students in one NKH SIF campaign intervention school for each of three subgrantee sites that were not part of the main study. For the ancillary study, we followed a cohort of students in one NKH SIF campaign intervention school each in Nevada, Washington, and Texas. This ancillary study collected the same measures as the moderate-evidence cross-sectional design, also on a target of a minimum of 30 students per school, at the same two measurement occasions (baseline in fall or spring of the 2016–2017 school year and follow-up in fall of the 2018–2019 school year) but was not designed to provide a moderate level of evidence. Students were randomly selected following the same protocol as for the main study. We replenished the sample when there was attrition.

As with all surveys, unit non-response was observed. To account for potential non-response bias, we weighted survey respondent data back to school totals for gender by grade. This ensured that the estimates are representative of the school population. The average unequal weighting effects in baseline and follow-up were 1.27 and 1.29 respectively. Chi-square goodness of fit tests were also used for each site and year to compare the distribution of grade and gender to that of the school population. The only deviations found, using a level of confidence of 0.05, was the distribution of grades at MLK Elementary (Washington) in the baseline study (p -value=.0319) and distribution of gender for the follow-up sample at Treem Elementary (Nevada) (p -value=0.0362). Both of these schools were part of the ancillary study. All other sample distributions were not significantly different from their population distributions.



Data Collection

The study design focused on recruitment through schools, random sampling of students from school-provided rosters, and interviewer-administered data collection through in-person interviews and computer-assisted telephone interviewing for ancillary study school participants and as a secondary mode if main study participants could not participate in person. Identical data collection procedures were followed for both the Main and Ancillary Studies with the only exception being that interviews were conducted in person when possible for main study participants and over the phone for all ancillary study participants.

We notified school district research and assessment directors about all proposed school selections. RTI completed and received approval of formal research applications in all school districts that required them. RTI also contacted and received approval from the school-level administrators. All communications and materials referred to the evaluation study as the Food Reaching Kids Study (FoRKS). Some schools provided a school staff volunteer to serve as a study coordinator (FoRKS Coordinator) to assist with project-related recruitment, logistics, and in-person data collection, as needed. We compensated schools and study participants for their time.

The following criteria were required for eligibility:

1. Aged 18 years or older,
2. Had a student at a selected school in grades 1–4,
3. Was a parent or legal guardian of a selected student (hereafter referred to simply as parents for brevity), and
4. Consented to participate.

Prior to data collection at baseline and follow-up, we obtained rosters from schools to facilitate selection of study participants. Students in grades 1–4 were selected for participation because all schools included these elementary school grades, thus ensuring consistency in age of students across study sites.

After the student sample was drawn and one month prior to data collection at baseline and follow-up, recruitment mailers—which included a letter to parents, a study brochure, and a study information sheet—were sent to selected students’ households or handed out at school. RTI finalized site visit logistics with the school points of contact at each of the main study schools several weeks before each visit; this was not done for the ancillary study schools because those interviews were all conducted by phone.

RTI trained FoRKS Coordinators in the recruitment protocol and script and in how to use the recruitment software to determine eligibility and schedule student interviews. In year two, we provided a refresher training for returning FoRKS Coordinators. Recruitment of eligible parents for each school began two weeks prior to the start of data collection at each school. Up to 10 phone call attempts were made to each selected household, unless the respondent refused to participate or was determined to be ineligible.

For both baseline and follow-up data collection, we finalized data collection protocols and a manual of procedures and trained a team of interviewers to travel to sites for data collection, including fluent Spanish speakers to be available at every site. Interviewers completed a three-day comprehensive training and certification program that included individual and group practice using the data collection program to implement the impact survey (Qualtrics), the Nutrition Data System for Research (NDSR) dietary recall procedures, and training in site visit logistics.

Because of school schedules, baseline data collection occurred over nine months from fall 2016 to spring 2017, while we conducted follow-up data over three months within the fall 2018. After conducting statistical analyses, we determined no noticeable differences caused by seasonality.

Trained interviewers collected data from consenting parents of selected students in all intervention and control schools using ~45-minute in-person interviews during prescheduled interview times. We requested that parents include the selected child in the interview to assist with accurately reporting dietary intake.³² All children eligible for selection in the study were eligible to be present for the parent-proxy interview, regardless of age. Children’s participation was strictly voluntary, at the discretion of both the parent and child, and conditional on the parent’s consent and child’s assent. Children participated in 96% of the interviews at baseline and 98% at follow-up. In cases where the parents and children’s responses differed to the questions in the food frequency questionnaire or 24-hour diet recall, the response provided by the child was recorded. If the child could not recall or did not know food details (e.g., brand) or amounts, the parent’s additional information was recorded.

For those main study participants who could not participate in in-person interviews or elected not to be interviewed in person, we offered the opportunity to complete the interview via phone. All ancillary study participants were interviewed by phone. RTI compensated parents for their time with a \$40 check, while participating students received a \$20 gift card.

Students from ancillary study schools who participated in the baseline data collection for the impact evaluation and opted to be contacted for future data collection and were still in grades 1–4 at the time of follow-up data collection were recruited for follow-up data collection. We worked to enhance the retention of these students in the study by contacting them in between data collection periods. In April and August 2018, all ancillary study participants received a postcard reminding them about the study and letting them know we would be reaching out in the fall. The postcard also directed them to the study website and asked them to update their contact information via the website to be entered to win one of two iPads. The postcards were mailed along with a small gift with the study logo (an LED mini flashlight in April and a water bottle in August). The study toll-free hotline and email address were also monitored throughout this period in case any students or parents reached out with questions about the study.

Two ancillary study schools (Fletcher Elementary and Treem Elementary) agreed to participate in follow-up data collection but declined to provide a roster. In these schools, we had contact information only for students from baseline data collection. Because we did not have a roster from which to sample, we provided recruitment packets for all students in grades 1–4 at these schools and the FoRKS Coordinator or principal distributed them to students. Students at these schools

were recruited based on their baseline contact information, by parents calling the toll-free number in the packets, or by the FoRKS Coordinator, who had access to the roster. Fletcher Elementary provided a FoRKS Coordinator for the study but Treem Elementary declined to do so.

Method Validation

Considerations in selecting content for the instrument included (1) consistency with the theoretical basis of the NKH SIF campaign models, (2) evidence from empirical research about food security constructs, and (3) a preference for items from validated instruments that have been used successfully in similar studies or with similar populations. As needed, select items have been minimally adapted to ensure relevancy for this data collection purpose. We obtained items from the following instruments: the Youth Risk Behavior Surveillance System, the National Health and Nutrition Examination Survey, the Current Population Survey, and the Behavioral Risk Factors Surveillance Survey. Instrument measures included sociodemographic characteristics, child and household food security modules, a food frequency questionnaire (FFQ), and a 24-hour dietary recall. A 24-hour dietary recall method is widely accepted as an effective way to aid in memory retrieval of dietary information,³³⁻³⁵ and the resulting recalls have been shown to be valid in assessing meal patterns in children.³⁶ Data collection of 24-hour dietary recalls by phone does not significantly differ in accuracy from face-to-face assessments.³³ FFQs can better capture overall diet and food groups consumed but are less accurate in assessing meal patterns. Supplementing the 24-hour recall with an age-appropriate FFQ enabled us to compare points in time and assess nutritional quality based on national recommendations such as USDA's MyPlate.

We used the NDSR multiple-pass interview methodology to streamline the dietary recall data entry and food coding. The first version of the software was released more than 20 years ago and has been continually improved and updated to conform to technological advances. The NDSR contains over 18,000 foods and over 163 nutrients, making it one of the most comprehensive food databases in the country. This software has been widely used by nutrition researchers across the United States.³⁷⁻⁴⁷

Data Analysis

For the main study survey data analysis, we compared means and proportions for key survey variables at baseline (2016–2017 school year) and follow-up (fall semester 2018) at the individual school level and rolled up to the intervention level (main study intervention, main study control, and ancillary study intervention). Intervention-level estimates represent the combined responses of students within all schools at that evaluation level, either intervention or control. Additionally, we tested for statistically significant differences between the means and proportions for main study intervention and main study control schools at baseline and follow-up to determine whether the difference may be ascribed to the intervention program. To determine if participant characteristics influenced participation in school breakfast, afterschool meals and snacks, and summer meals in intervention schools when compared with control schools, we conducted student-level regression analysis with measures of meal consumption as the dependent variable and demographic variables as explanatory variables.

For the ancillary study analysis, comparisons of the same ancillary school students at baseline and follow-up are not presented due to the small number of ancillary school students who were interviewed at both time points (see **Section 4.1**).

To measure the correlation between the NKH SIF campaign implementation and food security, we developed food security scores using the *Guide to Measuring Household Food Security* (Revised 2000) based on the full 18-item module. Parents in the study schools were asked a series of questions related to the food security of the children (8 questions) and of the adults (10 questions) in their household. The respondent's answers to these questions were recoded into binary variables and binned into a categorical variable of food security as follows. A child was considered to have a high food security score if their caregiver did not answer affirmatively to any of the questions about child food insecurity, a marginal food security score if the caregiver answered one question

affirmatively, and low food security if they answered two or more questions about child food security in the affirmative. An adult was considered to have a high food security score if they did not answer affirmatively to any of the questions about adult food insecurity, a marginal food security score if they answered one to two questions about adult food insecurity affirmatively, and low food security if they answered three or more questions about adult food security in the affirmative. While we considered including a fourth “very low food security” categorical group for child and adult food security, overall only 2% of the children reported a very low food security score overall. Even though the adults had 12% of responses in the very low food security, we decided to report results with consistent categories for both groups. These participants’ respondents are included in the “low food security” category in the presented results.

As a measure of the healthfulness of students’ diets, we used the Healthy Eating Index (HEI), a tool developed by the USDA and the National Cancer Institute to evaluate the extent to which diets are consistent with the Dietary Guidelines for Americans. Possible index points range from 0–100, with a higher score indicating greater consistency of the diet with the Dietary Guidelines for Americans.

The nutritional definition of breakfast was based on definitions used in a USDA pilot of special nutrition programs and the USDA’s nutrition standards for the NSLP and SBP.^{48,49} This definition was confirmed using typical intake behavior of children in the United States.⁵⁰ In this study, a nutritionally substantive breakfast was defined as consumption of foods from at least two of five main food groups and breakfast intake of food energy greater than 140 kilocalories for males and 120 kilocalories for females. This caloric value is 10% of the Estimated Energy Requirement of 1,400 kilocalories for males and 1,200 kilocalories for females assumed for this population based on U.S. Dietary Guidelines.⁵¹ The five food groups used are milk and milk products, meat and meat equivalents, grain products, fruits and fruit juices, and vegetables and vegetable juices. Some examples of a nutritionally substantive breakfast include cereal and milk; juice or fruit, a muffin, and milk; and egg, sausage, biscuit, milk, and juice. This definition was chosen because it requires a more nutritionally substantive meal than simply breaking the overnight fast, without being too stringent in its food group and calorie requirements.

For the survey data, we calculated effect sizes using Cohen’s *d* for means and Cohen’s *h* for proportions. Larger effect sizes reflect larger differences relative to the standard deviation. As a general rule, an effect size of 0.2 is regarded as a small effect size, 0.5 is a medium effect size, and 0.8 is a large effect size.

Changes to the SEP for the Impact Study

- 1. Replaced two schools in the main study.** As indicated in previous SEP modifications and in this report, we needed to replace selected schools, due primarily to their unwillingness to fully participate. Using the procedures described in the SEP for selecting schools and their associated controls, we replaced one intervention school and one control school. We substituted the main study Wisconsin intervention school Alcott Elementary with Victory Elementary. In Florida we replaced the control school Samuel S. Gaines Elementary with Ensley Elementary.
- 2. Moved primary data collection dates.** To account for delays in school recruitment and onboarding, and program implementation, we shifted data collection from fall 2016 (baseline) and spring 2018 (follow-up) to the 2016–2017 school year (baseline) and fall 2018 (follow-up).
- 3. Converted ancillary study cohort design to cross-sectional.** Despite employing a robust set of retention strategies, as described in the SEP, we were unsuccessful in maintaining a sizable sample of our baseline cohort. Across all sites, we retained 19 of 103 students from baseline. We attribute our low retention rates in part to schools limiting ongoing study promotion, students aging out of the study because of the delayed timeline, timing of data collection, and outdated contact information.

- 4. Added survey data analysis of main study intervention and ancillary study intervention schools combined.** In order to address low sample size in the ancillary study cohort, we added additional separate pre-post comparisons for main study intervention and ancillary study intervention schools combined. This allowed an increase in sample size for the intervention groups, thus also increasing power for statistical testing.
- 5. Revised evaluation questions.** While the two overarching evaluation questions were retained, some sub-questions were revised in response to data availability and shifts in the study team's priorities. For example, we eliminated a question about campaign characteristics affecting participation because we could not obtain high quality quantifiable campaign characteristics data (e.g., whether money or equipment was provided, BAB model types, BAB implementation dates).
- 6. Adapted administrative data analysis procedures.** To conserve resources, we limited our analysis of the administrative data to two timepoints instead of three. Due to missing school- or site-level sociodemographic data, we were unable to utilize modeling in our analysis of the school-level administrative data.
- 7. Modified survey data analysis procedures.** In response to our review of the data and ongoing conversations among the full study team, we adjusted procedures. For example, because of small sample sizes, we limited our adjustment of weights to gender and grade and did not include race/ethnicity. We were unable to obtain sufficient numbers of participants of specific race/ethnicity in some schools to weight to those totals. Small sample sizes of a specific group can result in large inflations of variance due to unequal weighting effect. Further, we eliminated select regression analyses for specific types of models to reflect Share Our Strengths priorities at the time of data analysis. For the models developed, we planned on using a site by time interaction with adjustments for race/ethnicity. Due to the limitations of sample size by site and objective, we modeled by intervention group. Further, we adjusted the model by more variables than those described in the SEP, including number of adults in the household and education status. Lastly, while the SEP described using mixed models to account for the clustering of schools, we employed survey regression techniques to model the regressions using SUDAAN PROC REGRESS procedure. This allowed us to account for the clustering of students within schools using specific survey methodology while producing adjusted estimates. For the student-level regression analysis explaining the post-intervention outcomes, we incorporated the matching variables in the model as covariates. These include household attributes, enrollment, and number of adults and children in the household, as well as race and ethnicity.

3.2 Implementation Evaluation Design

▲ Case Studies

❖ Data Collection

RTI conducted two site visits to interview community partners, program staff, and leadership teams or advisory groups. In fall 2016 or spring 2017 (2016–2017 school year), we conducted baseline site visits, predominantly in person but with some interviews occurring over the phone if the respondent was not available when we were on-site. These baseline visits focused on capacity, planning, partnerships, and implementation of activities to date. In fall 2018 (2018–2019 school year), we conducted “virtual site visits,” which entailed phone interviews with staff. These follow-up site visits focused on implementation updates for school breakfast, afterschool meals and snacks, and summer meals programs: changes to the programs since baseline; facilitators, barriers, and lessons learned; and an understanding of NKH SIF campaign implementation at the intervention schools.

Before each baseline site visit, site visit teams reviewed data from subgrantee program documents to learn about their programmatic strategies and tactics and to obtain context; these documents included the subgrantee application, year 1 plan, subgrantee and Share Our Strength quarterly review documents, annual plans, activity trackers, work plans, and the Community Wealth Partner Report. The report included findings of a capacity-building assessment conducted by Community Wealth Partners, which partner with nonprofits and foundations to advance social change. To ensure we collected similar data across all subgrantees and to help inform and build on what was learned during the site visit, we developed a data abstraction form (see **Appendix B**) for this subgrantee program document review. This form was based on key constructs from the Consolidated Framework for Implementation Research (CFIR).^{52,53} Preparation for follow-up site visits followed a similar approach as baseline site visits and included additional documents, such as promotional materials and strategic plans that were generated by partners since baseline.

We developed semi-structured, in-depth interview guides (see **Appendix C**), again based on key constructs from the CFIR, for each key informant role, including subgrantee implementation staff, leadership, implementation school staff, and partners. We interviewed implementation school staff only at follow-up; all other roles mentioned we interviewed at baseline as well. Lead interviewers tailored each interview guide using data abstracted from subgrantee program documents. Interviewers gathered in-depth information about aspects of each NKH SIF campaign’s design, development, and implementation.

Before each round of site visits, we implemented a process to identify relevant participants by obtaining input from subgrantees and Share Our Strength staff. The scheduling process for the site visits began with a 30-minute planning call between the RTI site visit team and the main points of contact for the subgrantee. On this planning call, RTI provided a description of the site visit’s purpose and interview topic areas and outlined the process for scheduling key informant interviews. Subgrantees also completed a key informant identification worksheet. After gathering input from Share Our Strength and reviewing the identification worksheet for each subgrantee, RTI or the subgrantee scheduled one-hour interviews with each of the chosen key informants. Baseline site visit key informants included subgrantee implementation staff and leadership and partners such as school district and school staff. Follow-up site visit key informants included only subgrantee staff, Share Our Strength staff, and two intervention school staff.

Prior to each round of site visits, the RTI team held a one-day training to prepare site visit staff on data collection procedures and to review the interview guide and the interview guide tailoring process. The training included an overview of site visit timelines, responsibilities, guidelines, and etiquette. Further, all site visit staff completed RTI’s required annual training on protection of human subjects.

For each baseline interview, one RTI team member led the interview and a second took notes. With respondent permission, the team recorded the interviews, which the note taker used to ensure the interview notes were complete. For follow-up interviews, which were conducted over the phone, one RTI team member conducted the interview without a notetaker and a third-party vendor transcribed the interviews. As appropriate, the interview team conducted interviews with multiple informants (e.g., two members of the same organization with different, relevant roles in the program) in the same interview.

Data Analysis

Guided by the CFIR as a theoretical framework, we used conventional qualitative content analysis to analyze interview and subgrantee document data. We identified themes through the inductive approach, which involves identifying themes through a close reading of the data for each subgrantee. Emergent themes across cases serve as working hypotheses that are subsequently tested against the data by reviewing findings of additional case studies on the same area of inquiry.^{54,55}

To analyze these data, RTI used an analytic table based on topics specified in the protocol and report outline topics. We categorized data from program documents and interviews according to the table/topics within each column. Our approach centered on analyzing emerging themes from subgrantee program documents and interviews that could be associated with topics outlined in the analytic table. Using the identified themes, we drafted case studies for each subgrantee describing implementation experience, facilitators to implementation, challenges experienced, and lessons learned. The final baseline case study reports are provided in **Appendix D**, and the final follow-up case study reports in **Appendix E**.

Activity Tracker Data

Data Collection

To document NKH SIF subgrantee activities, Share Our Strength and RTI developed an activity tracker template in Microsoft Excel to enable subgrantees to record meaningful stakeholder interactions that aligned with NKH campaign strategies to increase participation in school breakfast, afterschool meals and snacks, and summer meals. The subgrantees also used the activity tracker templates to record meaningful activities related to SNAP, WIC, and nutrition education programs, as well as any government agency interactions. Compared to the other program activity types (relating to school breakfast, afterschool meals and snacks, and summer meals), SNAP, WIC, and nutrition education were not considered program areas of focus for any of the subgrantees, and it was expected that the majority of the activities recorded in the activity trackers would reflect activities to increase awareness and participation in school breakfast, afterschool meals and snacks, and summer meals programs.

Subgrantees recorded what they considered a meaningful activity with a school, organization, or government official and associated those activities with a program area (school breakfast; afterschool meals and snacks; summer meals; SNAP, WIC, and nutrition education programs; or government agency interactions). Follow-up activities with the same school or organization were recorded as a new activity. Activities involving multiple schools or organizations (for example, a single meeting with multiple organizations) were recorded as one activity. Starting with Year 1, Q2 (Oct–Dec 2015), partners submitted completed activity trackers to Share Our Strength every quarter, except for one subgrantee who did not provide Share Our Strength with a 4th quarter activity tracker in Year 3 (Apr–Jun 2018) because they had ended their funding partnership with Share Our Strength.

 **Data Analysis**

To facilitate analysis of the activity trackers, Share Our Strength and RTI developed a codebook (shown in **Table 6**) to classify each activity based on the NKH strategy with which it aligned. The codebook lists possible activity types, their definitions, and additional guidance for coding. Based on an activity's primary goal, each activity could be coded as only a single type of activity within a given program area. For example, if the primary goal of a meeting with a school was to convince the school to implement BAB, it was categorized as such, even if other breakfast topics were discussed. However, an activity could be coded to multiple program areas. In other words, a meeting could be coded to both school breakfast and summer meals, so long as only one NKH strategy *within* each program was selected. The exceptions to this were the two non-program-specific categories (i.e., SNAP, WIC, and nutrition education; and government agency interactions); these did not have multiple activity types and were considered stand-alone categories used when a subgrantee engaged in an activity that did not fit into one of the program-specific activities.

For Year 1 (2015–2016), RTI completed an initial round of coding to classify activities listed in the activity tracker. Share Our Strength and each subgrantee reviewed RTI's coding and clarified any activities that were categorized incorrectly or were not described clearly enough to be categorized. For Year 2 (2016–2017), Share Our Strength and RTI developed guidance for each subgrantee to categorize their own activities consistently; this was also used in Year 3 (2017–2018). Share Our Strength reviewed (and cleaned as necessary, with confirmation from the subgrantees) each subgrantee's coding before RTI analyzed and summarized the activity trackers. After data were reviewed by Share Our Strength, RTI used the Microsoft Excel files to sum activities for each program by quarter and year. RTI then created charts (also using Microsoft Excel) for each subgrantee illustrating the number of activities and type of activities per program area for the first three years of the NKH SIF grant and provided a summary of key takeaways for each subgrantee regarding their level of activity in each program area for each NKH strategy. **Appendix F** provides the activity tracker summary reports.

Table 6. Activity Tracker Codebook

Activity	Description
School Breakfast	
Interactions to convince schools to implement BAB	Provide general information about BAB, discuss model options, gather information, or observe breakfast model <i>in order to influence schools to implement BAB</i>
Provide pre-implementation technical assistance to BAB schools	Discuss potential challenges/barriers and resources for addressing these, conduct site visits, or gather information to identify pre-implementation recommendations <i>after the school has already committed to implementing BAB</i>
Provide post-implementation technical assistance or conduct assessment of BAB schools	Conduct site visits or gather information to see what is or is not currently working and how to fix this <i>after the school has implemented BAB</i>
Raise awareness about breakfast generally	Interactions with specific schools (e.g., breakfast events, taste tests, conducting/planning a Breakfast Challenge) or interactions not targeted to specific schools or districts (e.g., media campaigns, statewide superintendent meetings) to raise awareness about school breakfast
Convene breakfast workgroup	Meet with stakeholders from multiple organizations to discuss school breakfast
Afterschool Meals or Snacks	
Recruit new and/or retain sites or sponsors	Interactions to support or add a new site or sponsor, including finding a sponsor for a current or potential site
Improve programming and/or provide technical assistance	Interactions to improve meal quality, add activities, encourage use of an umbrella model, switch from snacks to suppers, or increase participation at an existing site
Raise awareness	Provide information about afterschool meals or snacks that is not targeted to a specific organization with the explicit intent of recruiting them as a site or sponsor; media campaigns
Convene afterschool work group	Meet with stakeholders from multiple organizations to discuss afterschool meals and snacks
Summer Meals	
Recruit new and/or retain sites or sponsors	Interactions to support or add a new site or sponsor, including finding a sponsor for a current or potential site
Improve programming and/or provide technical assistance	Interactions to improve meal quality, add activities, increase number of operating days/number of meals
Raise awareness	Provide information about summer meals that is not targeted to a specific organization with the explicit intent of recruiting them as a site or sponsor; market site locations; media campaigns generally promoting summer meals
Convene summer work group	Meet with stakeholders from multiple organizations to discuss summer meals
SNAP/WIC/Nutrition Education	
Any SNAP, WIC or nutrition education activity	
Government Agency Interaction	
Any interaction that involves a government agency	Includes meeting with a government agency to discuss data sharing agreements

Changes to the SEP for the Implementation Study

1. **Reduced the scope of the case studies.** To conserve resources, we modified the design of the case studies to reduce the scope in the following ways:
 - a. Eliminated mid-point site visits, thus limiting data collection points to baseline and follow-up.
 - b. Shifted timing of the site visits from spring 2016, spring 2017, spring 2018 to 2016–2017 school year (baseline) and fall 2018 (follow-up) to maintain alignment between the data collection activities of the impact and implementation evaluations while eliminating the mid-point site visit.
 - c. Conducted “virtual” phone visits rather than in-person at follow-up.
 - d. Reduced the total (across all six subgrantees) number of interviews at follow-up from 90 (15 per site, as specified in the SEP) to 45 (7-8 per site). Multiple people were sometime interviewed together, so the number of interviewees may be higher than the number of interviews.
 - e. Replaced the more formal approach to summarizing intervention implementation using NVIVO described in the SEP with a less formal but still systematic approach using a matrix to classify interview responses about implementation. Replacing the NVIVO coding also meant that we did not assess the kappa coefficient in NVIVO for interrater reliability in coding.
 - f. Did not complete the cross-site evaluation described in the SEP.
2. **Evaluated quarterly campaign strategy information.** We evaluated subgrantee quarterly activity trackers to assess only meaningful stakeholder interactions that aligned with NKH campaign strategies to increase participation in school breakfast, afterschool meals and snacks, and summer meals. In the original SEP, all outputs related to program implementation were to be monitored on a quarterly basis.
3. **Modified research question #3 to account for adaptability.** We determined that performing a formal evaluation of fidelity was inappropriate for this intervention. In the evaluation design phase, we envisioned that the NKH Playbook was more prescriptive, with specified activities and requisite amounts of those activities. After learning more about the subgrantees and their implementation plans, we recognized that they were selecting strategies and adapting them to their local contexts. Further, as part of their funding arrangements with Share Our Strength, the subgrantees reported their progress, successes, and challenges to Share Our Strength field staff. Share Our Strength provided technical assistance and guidance when subgrantees appeared to struggle or underperformed. Subgrantees used this information to revise their approaches. Because subgrantees employed ongoing monitoring and feedback to revise their activities purposively, assessing fidelity, reach, and dose was not appropriate for this evaluation. Instead, concluded that a more appropriate approach to assessing the subgrantees in this evaluation was to define fidelity as the ability of subgrantees to adapt their program while maintaining core NKH strategies. Otherwise, if adherence to their original work plan was required, then all subgrantees would be deemed “failures” by fidelity metrics. Thus, we revised the evaluation question to accommodate the implementation realities and apply fair assessments to the subgrantees.

3.3 Institutional Review Board Approval

Prior to commencement of data collection, RTI International’s Office of Research Protection Institutional Review Board reviewed and approved the study protocol (IRB ID number 13922).

4. FINDINGS

4.1 Summary of Data Collected

▲ Impact Evaluation

❖ Administrative Data

We obtained administrative data records from the six state agencies that administer the federal nutrition programs in each of the states where the subgrantees were located. This administrative data included monthly data on total enrollment; FRP meals program enrollment; the number of free, reduced-price, and paid meals served; and operating days. When possible, school- or site-level records were obtained for the entire state. School breakfast and lunch program data for Wisconsin were available only at the district level in baseline. In Florida, data for the SSO summer meals program were available only at the sponsor level, and in Florida and Washington, we were unable to get statewide summer meals data (both SFSP and SSO) for summer 2014, so we used summer 2015 data as a proxy. Michigan did not have SSO data, so we used July NSLP meal claims as a proxy. Additionally, Wisconsin did not have SSO summer meals programs.

Table 7 shows the total number of schools and non-school afterschool and summer meal sites included in the analysis. To get the most accurate estimate of change between the 2014–2015 school year and the 2017–2018 school year, we limited our analysis of breakfast and lunch to schools that were reported in both timepoints and schools that had data for the entire school year.

Table 7. Number of Schools/Sites within NKH SIF Campaign Target Areas in Administrative Data Collected from State Agencies

State and Program	NKH SIF Campaign Target Area		Rest of the State	
	2014–2015 ^a	2017–2018 ^a	2014–2015 ^a	2017–2018 ^a
Florida				
Breakfast and Lunch	1,233	1,233	2,356	2,356
NSLP Afterschool Snack	1,391	1,520	2,535	2,666
CACFP Afterschool Snack and Supper	659	998	412	672
SFSP Summer Meals ^b	1,617	1,908	2,165	2,484
SSO Summer Meals ^{b, c}	NA	62	62	30
Michigan				
Breakfast and Lunch	1,282	1,282	1,527	1,527
NSLP Afterschool Snack	261	190	360	318
CACFP Afterschool Snack and Supper	426	470	196	291
SFSP Summer Meals	868	916	666	906
July NSLP ^d	206	144	112	105
Nevada				
Breakfast and Lunch	362	362	233	233
NSLP Afterschool Snack	40	25	47	46
CACFP Afterschool Snack and Supper	214	302	85	68
SFSP Summer Meals	142	125	107	114
SSO Summer Meals	29	68	30	3
<i>continues</i>				

State and Program	NKH SIF Campaign Target Area		Rest of the State	
	2014–2015 ^a	2017–2018 ^a	2014–2015 ^a	2017–2018 ^a
Texas				
Breakfast and Lunch	536	536	7,191	7,191
NSLP Afterschool Snack	259	203	2,425	3,453
CACFP Afterschool Snack and Supper	692	731	2,187	3,251
SFSP Summer Meals	1,461	877	3,177	2,833
SSO Summer Meals	60	292	1,669	1,683
Washington				
Breakfast and Lunch	439	439	1,564	1,564
NSLP Afterschool Snack	132	115	392	416
CACFP Afterschool Snack and Supper	248	300	1,032	1,196
SFSP Summer Meals ^b	318	326	614	639
SSO Summer Meals ^b	NA ^e	NA ^e	87	52
Wisconsin				
Breakfast and Lunch ^f	NA	NA	NA	NA
NSLP Afterschool Snack	NA ^f	83	NA ^f	348
CACFP Afterschool Snack and Supper	84	107	58	85
SFSP Summer Meals	16	28	178	212
SSO Summer Meals ^g	NA	NA	NA	NA

CACFP = Child and Adult Care Food Program

SFSP = Summer Food Service Program

NSLP = National School Lunch Program

SSO = Seamless Summer Option

^a Summer data are from 2014 and 2018, except for Florida and Washington data, which are from 2015 and 2018.^b We were unable to get statewide 2014 data. We used 2015 data as a proxy.^c The 2015–2016 SSO data are sponsor level.^d We were unable to get 2014 SSO summer meals data. We used July 2015 NSLP data as a proxy.^e Washington has SSO, but data for the NKH SIF Target Area (King County) were unavailable.^f Breakfast and Lunch analyses and NSLP afterschool snack analyses for 2014–2015 in Wisconsin were at the district level.^g Wisconsin did not have SSO summer meals programs.

Survey Data

Baseline data collection began in September 2016 with a pilot and was completed at all sites in May 2017. Follow-up data collection occurred between October and December 2018.

Table 8 shows the number of completed interviews by school, as well as the number of students interviewed at both baseline and follow-up. During baseline data collection, we interviewed 365 students across the nine school sites, 248 of which were in the main study (39–46 interviews per main study school). During follow-up data collection, we interviewed 310 students across the nine school sites, 229 of which were in main study (33–43 interviews per main study school). Thus the sample size needed to achieve 90% power in the main study (180 interviews at each time point, 30 per main study school) was exceeded at both baseline and follow-up. Of all students interviewed, 351 at baseline and 297 at follow-up completed the entire interview.^d We completed 25 to 38 interviews in each of grades 1–4 at both baseline and follow-up for all categories of schools (see **Table 9**).

^d An example of an incomplete interview would be a break-off (i.e., someone who did not finish answering the questionnaire).

Table 8. Number of Complete Interviews, by Intervention and School

Intervention and School	Baseline	Follow-Up	Both ^a
Main Study: Intervention	123	106	11
Broadview Elementary – Florida	40	34	2
Victory Elementary – Wisconsin	42	39	6
Pontiac Academy – Michigan	41	33	3
Main Study: Control	125	123	13
Ensley Elementary – Florida	46	38	5
Bose Elementary – Wisconsin	39	42	6
Timberland Charter – Michigan	40	43	2
Ancillary Study: Intervention	103	68	19
Fletcher Elementary – Texas	40	24	6
Treem Elementary – Nevada	31	14	7
MLK Elementary – Washington	32	30	6

^a Both indicates number of complete interviews with the same student at both baseline and follow-up. These are included in both the baseline and follow-up columns.

At seven schools, we achieved our goal of at least 30 follow-up interviews with parents/guardians of children who were eligible for FRP school meals. As noted earlier, two ancillary study schools (Fletcher and Treem Elementary) chose not to release rosters; thus, our ability to recruit parents was limited. Students at those schools were recruited based on their baseline contact information, by parents calling the toll-free number in the recruitment packets received by all first through fourth graders, or by the FoRKS Coordinator at Fletcher Elementary. Treem Elementary declined to provide a FoRKS Coordinator for the study. In total, 24 Fletcher students were interviewed at follow-up, including 6 students from baseline, and 14 Treem students were interviewed at follow-up, including 7 students from baseline.

Table 9. Number of Complete Interviews, by Intervention and Grade

Intervention and Grade	Baseline	Follow-Up
Main Study: Intervention	123	106
First	31	30
Second	30	25
Third	31	26
Fourth	31	25
Main Study: Control	125	123
First	35	27
Second	33	27
Third	32	38
Fourth	25	31
Ancillary Study: Intervention	103	68
First	22	13
Second	30	15
Third	33	17
Fourth	18	23

The lower response rate at Fletcher and Treem Elementary schools did not affect the level of evidence or power in the main study, as ancillary study schools were not part of the main study and comparisons between main study schools and ancillary study schools were not made. We did, however, make separate pre-post comparisons for main study intervention and ancillary study intervention schools combined; see subsection on Changes from the SEP at the end of

Section 3.1. This allowed an increase in sample size for the intervention groups, thus also increasing power for statistical testing.

Table 10 shows the demographic composition of the study sample. There were some statistically significant distributions changes among the Intervention groups between baseline and follow-up. Shifts in demographics of the sampled population were accounted for in survey data analyses by including these variables as covariates in the statistical models, which controls for changes in the demographic variable.

Table 10. Demographic Composition of the Sample

Demographic Characteristic	Main Study: Intervention		Main Study: Control		Ancillary Study: Intervention	
	Baseline N (%)	Follow-Up N (%)	Baseline N (%)	Follow-Up N (%)	Baseline N (%)	Follow-Up N (%)
Child Gender	p=0.92		p=0.31		p=0.67	
Male	63 (52%)	54 (51%)	78 (62%)	69 (56%)	48 (47%)	29 (43%)
Female	59 (49%)	52 (49%)	47 (38%)	54 (44%)	55 (53%)	38 (57%)
Grade	p=0.96		p=0.43		p=0.11	
1st	31 (25%)	30 (28%)	35 (28%)	27 (22%)	22 (21%)	13 (19%)
2nd	30 (24%)	25 (24%)	33 (26%)	27 (22%)	30 (29%)	15 (22%)
3rd	31 (25%)	26 (25%)	32 (26%)	38 (31%)	33 (32%)	17 (25%)
4th	31 (25%)	25 (24%)	25 (20%)	31 (25%)	18 (17%)	23 (34%)
WIC Participant	p=0.82		p=0.41		p=0.02*	
Yes	38 (31%)	31 (30%)	26 (21%)	31 (25%)	14 (14%)	19 (29%)
No	85 (69%)	74 (70%)	99 (79%)	92 (75%)	89 (86%)	47 (71%)
SNAP Participant	p=0.22		p=0.71		p=0.31	
Yes	76 (62%)	57 (54%)	55 (44%)	57 (46%)	38 (37%)	30 (45%)
No	47 (38%)	49 (46%)	70 (56%)	66 (54%)	65 (63%)	37 (55%)
Parent Education	p=0.78		p=0.66		p=0.54	
Less than High School	25 (21%)	19 (18%)	28 (22%)	24 (20%)	26 (26%)	16 (24%)
High School Graduate	39 (32%)	32 (30%)	33 (26%)	41 (34%)	27 (27%)	20 (30%)
Some College	39 (32%)	41 (39%)	47 (38%)	43 (35%)	26 (26%)	21 (32%)
College Graduate or Post-Doctoral	18 (15%)	14 (13%)	17 (14%)	14 (11%)	22 (22%)	9 (14%)
Parent Employed	p=0.04*		p=0.45		p=0.09	
Yes	88 (73%)	64 (60%)	79 (64%)	72 (59%)	60 (60%)	48 (73%)
No	32 (27%)	42 (40%)	45 (36%)	50 (41%)	40 (40%)	18 (27%)
Household Income	p=0.45		p=0.94		p=0.04*	
< \$20,000	47 (44%)	39 (40%)	48 (41%)	51 (43%)	28 (31%)	17 (27%)
\$20,000-\$49,999	46 (43%)	39 (40%)	49 (42%)	49 (41%)	38 (42%)	38 (60%)
> \$50,000	14 (13%)	19 (20%)	20 (17%)	20 (17%)	25 (27%)	8 (13%)
Hispanic or Latino	p=0.65		p=0.62		p=0.43	
Yes	42 (36%)	35 (33%)	25 (20%)	28 (23%)	42 (42%)	32 (48%)
No	75 (64%)	71 (67%)	98 (80%)	94 (77%)	59 (58%)	35 (52%)
Race	p=0.51		p=0.03*		p=0.07	
White Only	33 (29%)	24 (23%)	47 (39%)	30 (25%)	30 (30%)	10 (15%)
Black Only	44 (39%)	43 (41%)	36 (30%)	52 (43%)	25 (25%)	23 (34%)
Other	36 (32%)	39 (37%)	37 (31%)	39 (32%)	46 (46%)	34 (51%)

Source: Table 77 from Survey Data Analysis (**Appendix I**)

* The difference between the distribution of baseline and follow-up is statistically significant at the .05 level.

**The difference between this distribution of baseline and follow-up is statistically significant at the .01 level.

For the main study intervention group, we saw a decrease in the proportion of parents employed ($p = 0.04$) from baseline to follow-up. In the ancillary intervention group, the follow-up interviews included a higher proportion of WIC participants (29%) compared to baseline (14%). Also, the proportion of the ancillary intervention group with a moderate household income of \$20,000-\$49,999) was higher at follow-up (60%) compared to the baseline (42%, $p = 0.04$). For the main study control, the only difference found between baseline and follow-up sample was the distribution of race ($p = 0.04$). The follow-up sample had a significantly higher proportion of black students compared to baseline (43% vs 30%) and lower proportion of white students (15% vs 34%) compared to baseline.

For the ancillary study schools, we attempted to interview as many of the same students as possible at both baseline and follow-up, but we did not limit our follow-up interviews to only those students interviewed at baseline. However, we were unable to interview enough students at both baseline and follow-up in the ancillary study schools to do a cohort analysis as planned. We looked at students who were interviewed twice in both main study intervention schools and ancillary study intervention schools and determined that there was still insufficient data. In total, 19 students from ancillary study schools and 11 students from main study intervention schools received both a baseline and follow-up interview.

Implementation Evaluation

Case Studies

Case studies relied on collecting data from informant interviews. We conducted two rounds of key informant interviews in 2016 (baseline site visits) and 2018 (follow-up site visits). **Table 11** summarizes the number of interviews in each state.

Table 11. Number of Interviewees, by Subgrantee/State

Subgrantee	Baseline	Follow-Up
Florida Impact	14	11
Hunger Task Force (Wisconsin)	10	9
Texas Hunger Initiative	23	8
Three Square (Nevada)	13	8
United Way of King County (Washington)	13	7
United Way for Southeastern Michigan	14	8
Total	87	51

In 2016, each site visit team conducted 10 to 23 in-person interviews with subgrantee implementation staff, leadership, and partners. Subgrantee partners included schools, local community organizations, food banks, and afterschool and summer meal sponsors. We tailored interview guides using data abstracted from subgrantee documents, ensuring interviews covered implementation topics relevant to each subgrantee's implementation experience.

In 2018, site visit teams conducted 7 to 11 interviews with Share Our Strength staff, subgrantee implementation staff, leadership, and an educator at one school. Interviews provided an understanding of NKH SIF campaign changes, late implementation facilitators, barriers, and lessons learned, as well as an understanding of NKH SIF campaign implementation at the impact study intervention schools.

Activity Trackers

We collected activity tracker data quarterly from each subgrantee. We began collecting activity tracker data in Year 1, Q2 (Oct–Dec 2015) and completed data collection in (2017–2018), Q4 (Apr–Jun 2018). Data collected represent a total of 11 quarters of NKH SIF campaign activities by program type (i.e., school breakfast, afterschool meals and snacks, and summer meals) and subgrantee. One subgrantee reported only 10 quarters of data because they ended the campaign after Year 3, Q3 (Jan–Mar 2018).

4.2 Program Evaluation Findings

This study evaluated the effectiveness of the NKH SIF campaign and contributes to the evidence base by identifying successful strategies to reduce childhood hunger. By the logic of the theory of change, if the program was to have an impact on childhood hunger, it would need to increase participation in the key federal nutrition programs over the period of the treatment exposure. Thus, Question 1 evaluates the evidence that participation in these programs has increased. Question 2 evaluates the evidence that measures of childhood hunger have decreased.

▲ **Question 1: Is the NKH SIF campaign leading to increased participation in key federal nutrition programs?**

Question 1 consists of four sub-questions:

- **Sub-question 1a:** Have NKH SIF campaign strategies increased participation in school breakfast, afterschool meals and snacks, and summer meals?
- **Sub-question 1b:** Do school characteristics describe differences in participation in school breakfast, afterschool meals and snacks, and summer meals?
- **Sub-question 1c:** Do participant characteristics affect participation in school breakfast, afterschool meals and snacks, and summer meals?
- **Sub-question 1d:** Does participation in one federal nutrition program support participation in other federal nutrition programs?

Sub-questions 1a and 1b were answered using the administrative data on participation in FRP programs at the school district or county level (see **Section 4.1** for a summary of the administrative data collected) and additional socioeconomic data. Because the administrative data are comprehensive of the entire population from all districts in each state, there is no statistical significance testing for the results of Questions 1a and 1b (see Section 3.1, QED1 for more explanation). Statistical significance testing is not appropriate for population level data because it is meant to account for potential sampling errors, and the data are not a sample. With population level data, there is no objective statistical process for determining meaningful differences. It's a subjective process of looking at the differences in the two groups, and considering the magnitude of the differences, trends across time or space (e.g. county), and the practical significance given what we know about the intervention. Administrative data results presented in Tables 13-26 generally compare the 2014-2015 and 2017-2018 school years or the 2014 and 2018 summers for results related to summer meals. However, we also compared the fall 2014 and fall 2018 semesters for all states except Michigan (**Appendix H**), and we note how the results of that fall semester timeframe compare to the school years comparison.

Questions 1c and 1d were answered using survey data collected for the impact evaluation at the evaluation schools because these questions are related to individual participants.

◆ **Sub-question 1a: Have NKH SIF campaign strategies increased participation in school breakfast, afterschool meals and snacks, and summer meals?**

To answer sub-question 1a, we compared different measures of participation in nutrition programs (school breakfast, afterschool meals and snacks, and summer meals) within the NKH SIF campaign target areas to participation in the same programs either in the rest of the state or in matched counties that were not in an NKH SIF campaign target area but were similar in terms of race and ethnicity breakdown, urbanicity, and percentage of individuals living below poverty. Comparisons between the campaign target area and matched counties are more rigorous than comparisons to the rest of the state, because the matching increases our chances of comparing counties that are similar in all respects except for the intervention. Comparing with the rest of the state introduces additional factors that may be related to the outcome, making it difficult to separate potential

intervention effects from the effects of these other factors. We use both approaches to better understand change over time and whether that change might be related to or caused by the intervention.

Summer meals refers to free meals served during the time periods of Summer 2014 and Summer 2018 in most cases. In Florida and Washington, the summer meals data are from Summer 2015 and Summer 2018, because 2014 statewide data were unavailable.

We describe changes in several measures of participation in federal nutrition programs from the 2014–2015 school year (prior to NKH SIF campaign implementation) to the 2017–2018 school year (during or after NKH SIF campaign implementation). The primary measure is FRP participation rate, but we also describe changes in ADP for breakfast, as well as the total number of meals served in afterschool and summer meals programs. ADP (average daily participation) is standardized by the number of service days in a given month, making it a more reliable indicator than the total number of meals served, but we were less confident in the ADP estimates for summer and afterschool due to limitations in the reported data.

While we did also analyze trends in the number of meals served and ADP for paid breakfast and lunch meals, we did so only as a comparison point for FRP meal participation, and paid meal programs are not presented in this report. Paid meal programs were not a target of the NKH campaign.

ADP was calculated as the number of meals served for school breakfast in that target area during a given time period divided by the number of service days in that same time period. If the number of service days was not reported, we used 18.5 as a proxy for service days. The total number of meals served for afterschool and summer meal programs was the sum of all FRP meals served (NSLP snacks, CACFP snacks, and CACFP suppers for afterschool meal programs, and breakfast, lunch, supper, and snack for summer meal programs). Although the campaign partners were focused on increasing participation in CACFP suppers specifically, we included CACFP and NSLP snacks in the analysis to provide a more complete picture of overall impact on availability of afterschool snacks and meals within the target areas.

Participation rates for a given federal nutrition program are a function of FRP meal participation over FRP School Lunch participation. FRP School Lunch reaches the most children, so we used it as a metric for the pool of all potential children that could be participating in other FRP meal programs. In addition, this participation rate was one we could calculate more consistently than participation rate as a function of enrollment, due to missing enrollment data. Specifically, participation rate for breakfast was calculated as the ADP for FRP breakfast meals divided by the ADP for FRP School Lunch meals. The participation rate for afterschool was calculated as the number of FRP meals divided by the number of school lunches served. For summer meals, the participation rate was calculated as the total number of meals served divided by the number of school lunches served after it has been adjusted to account for multiple summer meals being served to a child in a day (1.7 meals) and a difference in the number of service days between the school year and the summer (167 vs. 40 days).

Additional information on specific calculations can be found in the footnotes of each table.

School Breakfast

The administrative data show that NKH SIF campaigns improved participation of FRP-eligible students in school breakfast programs between the school years 2014–2015 and 2017–2018, when the NKH SIF campaign was being implemented in the target areas. The magnitude of improvements in FRP school breakfast participation rate varied from state to state and between NKH SIF campaign target areas within each state. NKH SIF campaign target areas in Wisconsin, Nevada, and Texas had the largest increases in FRP school breakfast participation rate and ADP compared to the changes in the rest of their states. It is not clear whether the NKH SIF campaign strategies increased participation in school breakfast in Florida, Washington, or Michigan NKH SIF campaign target areas, although some NKH SIF campaign target areas within Michigan increased breakfast participation, namely Genesee County (Flint, MI).

ADP in FRP school breakfast increased in NKH SIF campaign target areas over the observation period in almost every state except for Washington, which saw a 3% decrease, and Michigan, which had no change (**Table 12**). By comparison, ADP in FRP school lunches in the NKH SIF campaign target areas decreased during the same period in every state except Florida, where it increased only slightly (**Table 13**). Similar trends are seen when comparing these data for the fall 2014 and fall 2018 semesters (Appendix H, Table 7) except ADP in FRP lunch decreased in all states including Florida between the two fall semesters. Given the magnitude and consistency of the increase in FRP school breakfast ADP between both school years 2014–2015 and 2017–2018 and fall 2014 and fall 2018 semesters within NKH SIF campaign target areas in Wisconsin, Nevada, and Texas compared to the rest of the state, it is likely that these differences are meaningful. While Florida also had sizeable increases, the increases were nearly the same as those observed in the rest of the state in school years 2014–2015 and 2017–2018 and smaller than the changes in the rest of the state in the fall 2014 and fall 2018 semesters.

Table 12. ADP in FRP School Breakfast in NKH SIF Campaign Target Areas, Compared to the Rest of State

State	NKH SIF Campaign Target Areas			Rest of the State		
	2014–2015	2017–2018	Percent Change	2014–2015	2017–2018	Percent Change
Florida ^a	229,495	246,794	7.5%	391,327	425,942	8.8%
Michigan	122,372	122,190	-0.1%	121,158	122,075	0.8%
Nevada	77,253	84,158	8.9%	21,065	21,120	0.3%
Texas ^a	167,669	177,576	5.9%	1,289,187	1,312,970	1.8%
Washington	28,790	27,887	-3.1%	120,810	119,133	-1.4%
Wisconsin	39,885	44,777	12.3%	81,172	82,549	1.7%

Source: Table 7 from Administrative Data Analysis 2014-2015 vs 2017-2018 (Appendix G)

^a September and October data for the entire state were excluded from both years due to hurricanes in the fall of the 2017-2018 school year.

Table 13. ADP in FRP School Lunch in NKH SIF Campaign Target Areas Compared to the Rest of the State

State	NKH SIF Campaign Target Areas			Rest of the State		
	2014–2015	2017–2018	Percent Change	2014–2015	2017–2018	Percent Change
Florida ^a	494,286	499,661	1.1%	766,362	834,916	8.9%
Michigan	233,555	225,523	-3.4%	220,996	208,793	-5.5%
Nevada	140,392	136,334	-2.9%	35,436	33,662	-5.0%
Texas ^a	274,677	268,443	-2.3%	2,044,776	2,061,082	0.8%
Washington	67,567	60,734	-10.1%	270,404	257,188	-4.9%
Wisconsin	73,232	72,200	-1.4%	179,682	166,220	-7.5%

Source: Table 7 from Administrative Data Analysis 2014-2015 vs 2017-2018 (Appendix G)

^a September and October data for the entire state were excluded from both years due to hurricanes in the fall of the 2017-2018 school year.

Combining these two measures, we get a participation rate for FRP school breakfasts and see that the participation rate in FRP school breakfast in the campaign target areas increased from 2014–2015 to 2017–2018 in every state, and these improvements were larger than any improvement seen in the rest of the state everywhere except Michigan (**Table 14**). This was also observed when comparing these data for the fall 2014 and fall 2018 semesters (Appendix H, Table 15). Note that fall 2018 data weren't available for Michigan.

Table 14. Participation Rate^a for FRP School Breakfast in NKH SIF Campaign Target Areas Compared to the Rest of the State

State	NKH SIF Campaign Target Areas			Rest of the State		
	2014–2015	2017–2018	Percent Change	2014–2015	2017–2018	Percent Change
Florida ^b	46.4%	49.4%	6.4%	51.1%	51.0%	-0.1%
Michigan	52.4%	54.2%	3.4%	54.8%	58.5%	6.6%
Nevada	55.0%	61.7%	12.2%	59.4%	62.7%	5.5%
Texas ^b	61.0%	66.2%	8.4%	63.0%	63.7%	1.0%
Washington	42.6%	45.9%	7.8%	44.7%	46.3%	3.7%
Wisconsin	54.5%	62.0%	13.9%	45.2%	49.7%	9.9%

Source: Table 15 from Administrative Data Analysis 2014-2015 vs 2017-2018 (Appendix G)

^a Participation Rate for FRP School Breakfast is a function of FRP School Lunches served (FRP Breakfast ADP /FRP School Lunches Served)

^b September and October breakfast and lunch data for the entire state were excluded from both years due to hurricanes in the fall of the 2017-2018 school year.

NKH SIF campaign target areas in Wisconsin and Nevada saw the most dramatic increase in FRP school breakfast participation rate (Table 14), which increased from 55% to 62% in both states. Both these states had more modest increases in the rest of the state. Wisconsin had an increase in FRP school breakfast participation rate (55% to 62%) that was similar to the rest of the state (45% to 50%, Table 14), so this change in participation rate may not be as meaningful as the one observed in Nevada. When comparing fall 2014 and fall 2018 semesters (Appendix H, Table 14), Wisconsin saw the largest increase in FRP school breakfast participation rate, which increased from 54% to 62%. The rest of the state also saw a large increase in participation rate (47% to 53%). While NKH SIF campaign target areas in Florida and Texas did not see as dramatic an increase in FRP school breakfast participation rate, both saw an increase more than 5% above the change in the rest of the state in both school years 2014–2015 and 2017–2018 and fall 2014 and fall 2018 semesters. This could point to meaningful differences in these areas as well.

In Wisconsin, Cudahy School District was the NKH SIF campaign target area with the largest change in FRP school breakfast participation rate, from 26% to 58%, compared to no change in the matched non-campaign target area (**Table 15**). Waukesha and West Allis-West Milwaukee School Districts also had larger changes compared to the matched non-campaign areas. Given the magnitude of these changes in comparison with matched non-campaign target areas, increases in FRP school breakfast participation rate in Cudahy, Waukesha and West Allis-West Milwaukee School District are likely meaningful. Hunger Task Force, the subgrantee working in Wisconsin campaign target areas, focused most of their efforts in improving participation in breakfast, including working with local groups to pass a meal quality resolution in Milwaukee schools, which raised awareness about access to breakfast in the school district. Hunger Task Force was also successful in getting support from state partners to use school breakfast report cards to influence low-performing schools. A strong internal champion (e.g., superintendent) within Cudahy School district may have contributed to the increase in school breakfast participation there.

Table 15. Participation Rate^a for FRP School Breakfast in NKH SIF Campaign Target Areas Compared to the Matched Non-NKH SIF Campaign Target Areas

NKH SIF Campaign Target Area	NKH SIF Campaign Target Areas			Matched Non-campaign Target Areas		
	2014–2015	2017–2018	Percent Change	2014–2015	2017–2018	Percent Change
Florida ^b						
Broward County ^c	41.6%	43.8%	5.4%	47.3%	45.7%	-3.5%
Hillsborough County ^c	59.5%	63.7%	7.1%	47.3%	45.7%	-3.5%
Miami-Dade County	41.0%	41.1%	0.4%	49.9%	51.7%	3.4%
Orange County ^c	50.3%	56.9%	13.1%	47.3%	45.7%	-3.5%
Michigan						
Genesee County ^c	56.1%	63.1%	12.5%	63.4%	67.1%	6.0%
Ingham County ^c	58.8%	64.3%	9.4%	63.4%	67.1%	6.0%
Kent County ^d	53.4%	54.0%	1.1%	50.2%	50.1%	-0.2%
Macomb County ^d	50.5%	51.6%	2.3%	50.2%	50.1%	-0.2%
Oakland County ^d	49.6%	51.5%	3.7%	50.2%	50.1%	-0.2%
Wayne County ^d	51.6%	51.8%	0.3%	50.2%	50.1%	-0.2%
Nevada						
Clark County	55.0%	61.7%	12.2%	63.3%	65.3%	3.2%
Texas ^b						
Heart of Texas	57.3%	62.9%	9.8%	64.9%	62.9%	-3.2%
Dallas Metroplex	65.5%	70.0%	6.8%	76.3%	75.5%	-1.0%
Southeast Texas	51.4%	57.5%	11.8%	42.4%	45.1%	6.3%
Washington						
King County	42.6%	45.9%	7.8%	46.1%	47.7%	3.4%
<i>(continues)</i>						
Wisconsin						
Cudahy School District	26.1%	58.2%	123.0%	72.5%	72.6%	0.2%
Green Bay School District	38.9%	46.2%	18.7%	79.4%	83.7%	5.4%
Milwaukee School District	62.1%	67.0%	7.9%	54.3%	58.5%	7.7%
Sheboygan School District	37.6%	58.8%	56.5%	20.1%	60.3%	200%
Waukesha School District	23.8%	38.0%	59.5%	21.3%	29.0%	36.1%
West Allis – West Milwaukee School District	32.2%	49.8%	54.4%	38.3%	45.5%	18.6%

Source: Table 16 from Administrative Data Analysis 2014-2015 vs 2017-2018 (Appendix G)

^a FRP school breakfast participation rate is a function of FRP school lunches served (Breakfast = FRP breakfast ADP/FRP school lunches served).

^b September and October breakfast and lunch data for the entire state were excluded from both years due to hurricanes in the fall of the 2017-2018 school year.

^{c,d} Indicates NKH SIF campaign target areas (counties) within a given state that shared a matched non-NKH SIF campaign target area (county).

Clark County, Nevada also showed meaningful improvements in FRP school breakfast participation rate (Table 15) compared to the matched non-campaign area. Implementation of Nevada's Senate Bill 503 (SB 503) resulted in expanded breakfast participation across the state, but Three Square's campaign further encouraged participation in Clark County by providing incentives for participating schools and generating awareness about the program.

NKH SIF campaign target areas in Florida saw a more modest increase in FRP school breakfast participation rate (Table 14), which increased from 46% to 49%. By comparison, the rest of Florida saw a slight decrease in the participation rate in FRP school breakfasts. Orange County was the

NKH SIF campaign target area with the most meaningful change in FRP school breakfast participation rate, from 50% to 57%, compared to a decrease in the matched non-campaign target area (47% to 46%, Table 15). Similar trends are seen when comparing these data for the fall 2014 and fall 2018 semesters (Appendix H, Tables 15-16). Florida saw an increase in FRP school breakfast participation rate from 45% to 50% in NKH SIF campaign target areas compared to a smaller increase in the rest of the state (51% to 52%). Orange County saw the largest increase between fall 2014 and fall 2018, from 48% to 56%.

NKH SIF campaign target areas in Texas increased the participation rate in FRP school breakfasts from 61% to 66%, while there was no observed change in the rest of Texas, and improvements were similar across all three campaign target areas (Table 15). Similar trends are seen when comparing these data for the fall 2014 and fall 2018 semesters (Appendix H, Tables 15-16). Texas Hunger Initiative, the subgrantee working in Texas, built on prior success with BAB in elementary and middle schools; they also focused on advocating for Second Chance breakfast in high schools during this time period.

King County, Washington, also saw modest increases in its FRP school breakfast participation rate that were more than the rest of the state; however, this appears to be driven by a decrease in FRP School Lunch participation (the denominator in participation rate) rather than by participation in FRP school breakfasts, which actually declined more in King County than in the rest of Washington State (see Tables 12 and 13). Similar trends are seen when comparing these data for the fall 2014 and fall 2018 semesters (Appendix H, Tables 15-16). These trends could be due to demographic shifts in and around Seattle, with low-income families leaving Seattle. United Way of King County, the subgrantee working in Washington campaign target areas, also struggled with getting Fuel Your Future nutrition hubs schools to change their breakfast models. The Fuel Your Future AmeriCorps members did not have enough influence to increase participation in meals at a scalable level and were also frequently tasked with other food security and nutrition efforts in a school such as assembling food bags and planning wellness and family market nights.

NKH SIF campaign target areas in Michigan saw a small increase in FRP school breakfast participation rate (52 to 54%, Table 14), but this was less than the growth in the rest of the state. Fall 2018 data weren't available for Michigan. This finding aligns with what we would expect based on information learned in the implementation evaluation. United Way for Southeastern Michigan reported reasonably good, but slow, success with their breakfast implementation, which they attributed to their initial hiring of ineffective breakfast coaches. After they re-evaluated the skillset necessary for a successful breakfast coach (strong interpersonal skills to navigate the necessary relationships) and made new hires with these specific skills in mind, breakfast participation picked up. All Michigan NKH SIF campaign target areas had larger improvements in participation rate than their individual matched non-campaign target areas (Table 15). Within Michigan, Genesee County saw the largest improvement in FRP school breakfast participation (Table 15), which is similar to the improvements seen in participation in afterschool meals and snacks and summer meals and is likely due to the increased efforts to improve children's nutrition in the wake of the Flint water crisis (because poor nutrition compounds the health effects of lead in drinking water).

Afterschool Meals and Snacks

The number of FRP afterschool meals and snacks generally increased in NKH SIF campaign target areas in Florida and Nevada between the 2014–2015 and 2017–2018 school years but declined or stayed the same in the other four states in this evaluation (**Table 16**). Except for an increase in Texas, similar trends are observed when comparing these data for the fall 2014 and fall 2018 semesters (Appendix H, Tables 1). Correspondingly, the participation rate for FRP afterschool meals and snacks in NKH SIF campaign target areas in Florida and Nevada increased by 8% and 54% respectively, while participation rates in these programs declined in Michigan and Texas. The NKH SIF campaign target areas in Washington and Wisconsin had increases, but much smaller

^e The Fuel Your Future nutrition hub model places AmeriCorps members in targeted schools.

increases than the rest of Washington state and Wisconsin (**Table 17**). Similar trends were seen when comparing the corresponding data between the fall 2014 and fall 2018 semesters (Appendix H, Table 15). Participation rates for FRP afterschool meals and snacks in NKH SIF campaign target areas in Florida and Nevada showed meaningful increases, while they did not change for Wisconsin, Texas, or Washington. Fall 2018 data were unavailable for Michigan.

All states in this evaluation had notable decreases in the number of NSLP snacks served and, except for Michigan, increases in CACFP suppers served in the NKH SIF campaign target areas (Table 16). This aligns with one of the NKH SIF campaign strategies to convert NSLP snacks to CACFP suppers, and is reflective of the main overall goal of the campaign to focus on increasing CACFP supper participation. NKH SIF campaign target areas in Michigan did increase the number of CACFP snacks served, as did three other states, most notably Nevada, where CACFP snacks served nearly tripled between the two school years. The same trend was seen when comparing these data for the fall 2014 and fall 2018 semesters (Appendix H, Table 1). Given the magnitude of the increases in the number of CACFP suppers served in the NKH SIF campaign target areas, these increases are likely meaningful results of the NKH SIF campaign strategies.

Table 16. FRP Afterschool Meals and Snacks Served in NKH SIF Campaign Target Areas

State, Afterschool Program	Total Meals Served (% of all Afterschool Meals and Snacks)		
	2014-2015	2017-2018	Percent Change
Florida ^a			
All Afterschool Meals and Snacks	15,485,082 (100%)	18,361,371 (100%)	18.6%
NSLP Snack	6,536,065 (42%)	5,788,967 (32%)	-11.4%
CACFP Snack	1,484,000 (10%)	1,587,628 (9%)	7.0%
CACFP Supper	7,465,017 (48%)	10,984,776 (60%)	47.2%
Michigan			
All Afterschool Meals and Snacks	3,881,364 (100%)	3,575,374 (100%)	-7.9%
NSLP Snack	1,175,326 (30%)	1,013,049 (28%)	-13.8%
CACFP Snack	793,319 (20%)	854,068 (24%)	7.7%
CACFP Supper	1,912,719 (49%)	1,708,257 (48%)	-10.7%
Nevada			
All Afterschool Meals and Snacks	1,081,781 (100%)	1,552,655 (100%)	43.5%
NSLP Snack	138,930 (13%)	87,563 (6%)	-37.0%
CACFP Snack	44,800 (4%)	132,618 (9%)	196%
CACFP Supper	898,051 (83%)	1,332,474 (86%)	48.4%
Texas ^a			
All Afterschool Meals and Snacks	7,716,209 (100%)	6,791,912 (100%)	-12.0%
NSLP Snack	2,336,766 (30%)	1,334,410 (20%)	-42.9%
CACFP Snack	1,533,042 (20%)	1,236,862 (18%)	-19.3%
CACFP Supper	3,846,401 (50%)	4,220,640 (62%)	9.7%
Washington			
All Afterschool Meals and Snacks	778,739 (100%)	719,323 (100%)	-7.6%
NSLP Snack	447,052 (57%)	334,621 (47%)	-25.1%
CACFP Snack	114,492 (15%)	103,002 (14%)	-10.0%
CACFP Supper	217,195 (28%)	281,700 (39%)	29.7%

(continues)

State, Afterschool Program	Total Meals Served (% of all Afterschool Meals and Snacks)		
	2014-2015	2017-2018	Percent Change
Wisconsin			
All Afterschool Meals and Snacks	1,648,160 (100%)	1,643,706 (100%)	-0.3%
NSLP Snack	829,654 (50%)	726,402 (44%)	-12.4%
CACFP Snack	51,221 (3%)	60,916 (4%)	18.9%
CACFP Supper	767,285 (47%)	856,388 (52%)	11.6%

Source: Table 1 from Administrative Data Analysis 2014-2015 vs 2017-2018 (Appendix G)

a September and October data for the entire state were excluded from both years due to hurricanes in the fall of the 2017-2018 school year.

Table 17. Participation Rate^a for FRP Afterschool Meals and Snacks in NKH SIF Campaign Target Areas Compared to the Rest of the State

State	NKH SIF Campaign Target Areas			Rest of the State		
	2014-2015	2017-2018	Percent Change	2014-2015	2017-2018	Percent Change
Florida ^b	21.5%	23.3%	8.0%	21.1%	15.1%	-28.1%
Michigan	10.4%	9.9%	-4.9%	5.8%	8.4%	45.6%
Nevada	4.7%	7.2%	54.1%	13.2%	11.5%	-13.1%
Texas ^b	15.0%	12.9%	-13.6%	11.1%	13.4%	20.4%
Washington	6.9%	7.3%	4.9%	5.4%	6.9%	27.7%
Wisconsin	17.4%	17.8%	2.1%	7.8%	9.4%	20.0%

Source: Table 15 from Administrative Data Analysis 2014-2015 vs 2017-2018 (Appendix G)

a FRP Afterschool Meals and Snacks participation rate is a function of FRP school lunches served (CACFP at-risk suppers and snacks + NSLP afterschool FRP snacks)/FRP school lunches served.

b September and October afterschool and lunch data for the entire state were excluded from both years due to hurricanes in the fall of the 2017-2018 school year.

The improvements in afterschool meals and snacks participation rate and the number of CACFP meals and snacks served in Nevada are meaningful and consistent with implementation evaluation findings. Three Square, the subgrantee implementing the NKH SIF campaign in Nevada target areas, implemented an umbrella model and sponsored afterschool program sites (i.e., schools, community organizations) in order to expand afterschool meals and snacks availability and increase participation in the programs.

In Florida, the NKH SIF campaign target areas with the largest increases in afterschool meals and snacks participation rate was Miami-Dade County (16% to 22%, **Table 18**), followed more distantly by Orange County (32% to 35%). Both counties reported increases in all three types of afterschool meals and snacks served (Appendix G, Table 2). Similar trends for these counties are also seen when comparing the corresponding data from the fall 2014 and fall 2018 semesters (Appendix H, Table 2). The Florida afterschool meals and snacks results are interesting given that Florida Impact, the subgrantee implementing the NKH SIF campaign in Florida, did not mention any focus on afterschool meals and snacks in Miami-Dade County in the implementation evaluation interviews.

The lack of improvement in participation rate in total afterschool meals and snacks in NKH SIF campaign target areas in Michigan, Washington, and Wisconsin compared to the rest of each state (Table 17) is consistent with implementation evaluation findings. In Michigan, United Way for Southeastern Michigan reported a lack of focus on the afterschool meals and snacks programs. In Washington, United Way of King County reported being more focused on school breakfast programs and struggled implementing a coordinated effort for afterschool meals and snacks programs because they lacked a strong partner to take on this role. In Wisconsin, Hunger Task

Force struggled with administrative challenges, lack of awareness about afterschool meals and snack, and stigma in newer campaign target areas.

The decrease in the afterschool meals and snacks participation rate in all NKH SIF campaign target areas in Texas is not consistent with implementation evaluation findings, although the number of CACFP suppers served increased modestly. In the comparison of the fall 2014 and fall 2018 semesters, increased participation rates were observed in 2 of the 3 campaign areas (Appendix H, Table 17). Texas Hunger Initiative helped schools adopt an umbrella model to provide afterschool meals and snacks to all students, not just those attending enrichment activities. However, the afterschool program expansion did become a lower priority as Texas Hunger Initiative shifted NKH SIF campaign focus and resources toward school breakfast.

Table 18. Participation Rate^a for FRP Afterschool Meals and Snacks in NKH SIF Campaign Target Areas Compared to the Matched Non-NKH SIF Campaign Target Areas

State and Campaign Target Area	NKH SIF Campaign Target Areas			Matched Non-campaign Target Areas		
	2014–2015	2017–2018	Percent Change	2014–2015	2017–2018	Percent Change
Florida^b						
Broward County ^c	30.4%	25.0%	-18.0%	28.9%	26.1%	-9.6%
Hillsborough County ^c	13.1%	11.3%	-13.7%	28.9%	26.1%	-9.6%
Miami-Dade County	15.9%	22.3%	40.3%	9.9%	10.1%	2.2%
Orange County ^c	31.8%	34.7%	9.0%	28.9%	26.1%	-9.6%
Michigan						
Genesee County ^c	9.4%	12.0%	27.8%	6.8%	8.7%	28.6%
Ingham County ^c	8.5%	9.1%	6.5%	6.8%	8.7%	28.6%
Kent County ^d	11.2%	11.8%	5.1%	2.2%	7.0%	211%
Macomb County ^d	2.3%	2.7%	15.8%	2.2%	7.0%	211%
Oakland County ^d	6.8%	5.0%	-26.7%	2.2%	7.0%	211%
Wayne County ^c	16.3%	14.1%	-13.7%	2.2%	7.0%	211%
Nevada						
Clark County	4.7%	7.2%	54.1%	17.0%	12.5%	-26.4%
Texas^b						
Heart of Texas	16.3%	13.6%	-16.4%	0.7%	2.1%	217%
Dallas Metroplex	17.2%	14.5%	-15.7%	17.8%	27.0%	51.4%
Southeast Texas	8.7%	4.9%	-44.3%	0.8%	0.1%	-86.6%
Washington						
King County	6.9%	7.3%	4.9%	7.6%	6.8%	-10.3%
Wisconsin						
Brown County	10.8%	10.3%	-4.5%	17.1%	18.3%	7.3%
Milwaukee County	16.5%	16.4%	-0.9%	6.3%	9.7%	53.1%
Sheboygan County	0.6%	9.0%	1477%	NA ^e	NA ^e	NA ^e
Waukesha County	1.7%	3.9%	129%	17.6%	21.1%	19.8%

Source: Table 16 from Administrative Data Analysis 2014-2015 vs 2017-2018 (Appendix G)

^a FRP Afterschool Meals and Snacks participation rate is a function of FRP school lunches served (CACFP at-risk suppers and snacks + NSLP afterschool FRP snacks)/FRP school lunches Served.

^b September and October afterschool and lunch data for the entire state were excluded from both years due to hurricanes in the fall of the 2017-2018 school year.

^{c,d} Indicates NKH SIF campaign target areas (counties) within a given state that shared a matched non-NKH SIF campaign target area (county).

^e There were no afterschool meals claims in Calumet County, the comparison area for Sheboygan County.

Summer Meals

The NKH SIF campaign implementation only led to increased participation in FRP summer meals programs between 2014 and 2018 in Nevada, Washington, and Wisconsin (although Washington only saw an increase in participation rate, not total meals served, likely due to decreases in lunch participation observed during the same time period). The most meaningful increases were observed in Nevada where the number of summer meals served nearly doubled during this time period (**Table 19**), with a corresponding 107% increase in the participation rate for FRP summer meals in the Nevada NKH SIF campaign target area (**Table 20**), compared to an 80% decrease in participation rate in the rest of Nevada. This significant increase in meals served and participation rate is supported by the implementation evaluation results, which showed that Three Square implemented mobile meal routes, a successful summer awareness campaign, and added an afternoon summer mobile meal route mid-way through the second summer of implementation (2016).

Table 19. Total Number of FRP Summer Meals Served in NKH SIF Campaign Target Areas

Program and State	NKH SIF Campaign Target Areas		
	2014 ^a	2018	Percent Change
Florida ^b	7,562,547	6,771,205	-10.5%
Michigan ^c	2,450,019	1,873,192	-23.5%
Nevada	679,868	1,310,855	92.8%
Texas ^b	8,186,084	3,169,590	-61.3%
Washington	593,162	561,404	-5.4%
Wisconsin	881,205	910,899	3.4%

Source: Table 1 from Administrative Data Analysis 2014-2015 vs 2017-2018 (Appendix G)

- a Summer data are from 2014 and 2018, except for Florida and Washington data, which are from 2015 and 2018.
- b September and October data for the entire state were excluded from both years due to hurricanes in the fall of the 2017-2018 school year.
- c Michigan does not operate SSO, so they provided July NSLP as a proxy for SSO in both 2014 and 2018.

Table 20. Participation Rate for FRP Summer Meals^a in NKH SIF Campaign Target Areas Compared to the Rest of the State

State	NKH SIF Campaign Target Areas			Rest of the State		
	2014 ^b	2018	Percent Change	2014 ^b	2018	Percent Change
Florida ^c	23.5%	20.4%	-13.0%	15.8%	14.5%	-8.4%
Michigan ^d	16.2%	12.8%	-21.1%	12.5%	14.2%	13.3%
Nevada	7.2%	14.9%	107%	41.1%	8.1%	-80.2%
Texas ^c	36.1%	14.2%	-60.8%	14.4%	9.5%	-34.3%
Washington	13.0%	13.9%	7.4%	8.5%	8.1%	-4.6%
Wisconsin	22.8%	24.2%	5.9%	18.3%	22.9%	24.8%

Source: Table 15 from Administrative Data Analysis 2014-2015 vs 2017-2018 (Appendix G)

- a FRP summer meals participation rate is a function of FRP school lunches served (SFSP meals and snacks+ SSO meals and snacks)/(FRP school lunches served * 170% more meals served)/167 school days) * 40 summer days). For Florida and Texas, the number of school days is reduced to 130 to account for the omission of September and October lunch data.
- b Summer data are from 2014 and 2018, except for Florida and Washington data, which are from 2015 and 2018.
- c September and October lunch data for the entire state were excluded from both years due to hurricanes in the fall of the 2017-2018 school year.
- d Michigan does not operate SSO, so they provided July NSLP as a proxy for SSO in both 2014 and 2018.

The FRP summer meals participation rate in the Washington state NKH SIF campaign target area increased slightly from 13% to 14% but compared to the slight decline in the rest of the state could be significant (Table 20). These findings correspond to results from the implementation evaluation findings. United Way of King County reported success in supporting the expansion of summer meals programming through the deployment of AmeriCorps VISTA Summer Associates who help with implementation each summer. They were also successful at engaging both community- and school-based sponsors for program expansion and implementing a coordinated marketing campaign for summer meals that helped get a diverse group of people more informed about summer meals.

Participation in FRP summer meals programs increased in Wisconsin NKH SIF campaign target areas (23% to 24%); however, this was a smaller increase than was seen in the rest of the state (18% to 23%, Table 20). Implementation evaluation findings indicate that the summer meals program is Hunger Task Force's most established program with a strong collaborative partnership structure and a dedicated staff person. Much of Hunger Task Force's expansion in new NKH SIF campaign target areas focused on summer meals.

The participation rate in FRP summer meals programs decreased in Florida NKH SIF campaign target areas (23% to 20%) during the observation period, and 10% fewer summer meals were served in summer 2018 compared to summer 2015 (Table 19). The summer meals participation rate also decreased slightly (from 16% to 14%) in the rest of Florida (Table 20). In Broward County, the decrease in both summer meals participation rate (27% to 23%, **Table 21**) and the 9% decrease in summer meals served (Appendix G, Table 2) conflict with the implementation evaluation interview findings, where interviewees noted Broward County summer meals as one of the bigger successes.

Table 21. Participation Rate^a for FRP Summer Meals in NKH SIF Campaign Target Areas Compared to the Matched Non-NKH SIF Campaign Target Areas

State, Campaign Target Area	NKH SIF Campaign Target Areas			Matched Non-campaign Target Areas		
	2014 ^b	2018	Percent Change	2014 ^b	2018	Percent Change
Florida^c						
Broward County ^d	27.1%	23.4%	-13.5%	24.3%	24.2%	-0.4%
Hillsborough County ^d	16.7%	17.8%	6.7%	24.3%	24.2%	-0.4%
Miami-Dade County	27.0%	21.4%	-21.0%	13.6%	10.8%	-20.6%
Orange County ^d	18.7%	17.8%	-4.9%	24.3%	24.2%	-0.4%
Michigan						
Genesee County ^d	10.7%	12.1%	13.3%	18.1%	18.4%	1.9%
Ingham County ^d	8.0%	8.0%	-0.8%	18.1%	18.4%	1.9%
Kent County ^e	9.5%	9.0%	-5.9%	11.0%	14.4%	30.8%
Macomb County ^e	7.7%	7.1%	-8.1%	11.0%	14.4%	30.8%
Oakland County ^e	10.5%	9.2%	-12.2%	11.0%	14.4%	30.8%
Wayne County ^e	29.8%	19.9%	-33.2%	11.0%	14.4%	30.8%
Nevada						
Clark County	7.2%	14.9%	107%	65.0%	3.8%	-94.2%
Texas^c						
Heart of Texas	19.5%	15.8%	-19.2%	10.2%	7.9%	-22.2%
Metroplex	46.3%	16.4%	-64.6%	23.8%	13.4%	-43.7%
Southeast Texas	8.3%	5.8%	-30.5%	0.3%	0.1%	-56.5%

(continues)

State, Campaign Target Area	NKH SIF Campaign Target Areas			Matched Non-campaign Target Areas		
	2014 ^b	2018	Percent Change	2014 ^b	2018	Percent Change
Washington						
King County	13.0%	13.9%	7.4%	9.0%	8.0%	-10.2%
Wisconsin						
Brown County	24.3%	25.7%	6.1%	NA ^f	NA ^f	NA ^f
Milwaukee County	19.2%	19.6%	2.1%	NA ^f	NA ^f	NA ^f
Sheboygan County	12.2%	16.2%	32.1%	NA ^f	NA ^f	NA ^f
Waukesha County	0.5%	7.9%	1331%	NA ^f	NA ^f	NA ^f

Source: Table 16 from Administrative Data Analysis 2014-2015 vs 2017-2018 (Appendix G)

- ^a FRP summer meals participation rate is a function of FRP school lunches served (SFSP meals and snacks + SSO meals and snacks)/(FRP school lunches served *170% more meals served)/167 school days) * 40 summer days). For Florida and Texas, the number of school days is reduced to 130 to account for the omission of September and October lunch data.
- ^b Summer data are from 2014 and 2018, except for Florida and Washington data, which are from 2015 and 2018.
- ^c September and October lunch data for the entire state were excluded from both years due to hurricanes in the fall of the 2017-2018 school year.
- ^{d,e} Indicates NKH SIF campaign target areas (counties) within a given state that shared a matched non-NKH SIF campaign target area (county)
- ^f In 2018 Wisconsin Summer meal data, county names were not available for data outside of the NKH SIF campaign areas, so we were unable to compare to matched non-campaign areas.

The participation rate in FRP summer meals programs decreased in Michigan NKH SIF campaign target areas (16% to 13%), while the participation rate in the rest of the state increased (12% to 14%, Table 20). These trends are consistent with NKH SIF campaign target area-level participation rates (Table 21), with the exception of Genesee County (where Flint, Michigan is), which had an increase in participation. The declines in summer meals participation rates were lower in the other two NKH SIF campaign target areas outside of Detroit (Ingham and Kent Counties) than within Detroit (Macomb, Oakland, and Wayne Counties; Table 20), which conflicts with implementation evaluation findings that the formation of a summer meals coalition in Detroit led to a large increase in participation in summer meals. In fact, the number of meals served in the three Detroit counties combined declined 30% between summer 2014 and summer 2018 (Appendix G, Table 2).

In Texas, 61% fewer summer meals were served in NKH SIF campaign target areas in summer 2018 compared to summer 2014 (Table 19), leading to a corresponding decrease in participation rate in FRP summer meals programs (36% to 14%, Table 20). Decreases in summer meals participation rate were seen in all the Texas NKH SIF campaign target areas (Table 21). However, participation in these programs also decreased in the rest of Texas (Table 21). Texas Hunger Initiative also shifted to prioritize school breakfast over afterschool and summer meal programs, and noted that weather, political climate, and school funding may have negatively affected summer meals participation. Hurricane Harvey, which hit Texas in August 2017, caused summer participation to drop. This was because some summer site locations (especially apartment communities in Port Arthur) closed after Hurricane Harvey and never reopened. In addition, fewer children attended summer school at remaining sites in Southeast Texas, particularly Port Arthur, in the wake of Hurricane Harvey. According to Texas Hunger Initiative, their staff have noted a steep decline in participation in meals among the Latino community. Based on their relationships with the community, Texas Hunger Initiative staff say this is because they feared gathering publicly (lest they be arrested in a raid and deported) or they fear (incorrectly) that accepting food from a federal program might jeopardize their case for citizenship or a green card. Finally, Texas reduced funding for schools and school districts across the state. As a result, some schools (e.g., in Dallas Metroplex NKH SIF campaign target area) cut summer service days, such as closing on Fridays during the summer.



Sub-question 1b: Do school characteristics describe differences in participation in school breakfast, afterschool meals and snacks, and summer meals?

The same measures of participation in federal nutrition programs were used to answer sub-question 1b as for sub-question 1a. Information on calculations can be found table footnotes.

To understand how characteristics of different schools could help describe differences in participation in school breakfast, we compared participation rates in NKH SIF campaign target areas prior to and after campaign implementation by several school-level descriptors: urbanicity, immigrant population (low vs. high), school type (elementary, middle, high), ethnicity (low vs. high Hispanic population), and school need level (low, middle, high percent FRP enrolled). School need and school type were the most consistent descriptors of participation rate for FRP meals programs in NKH SIF campaign target areas, while immigrant population and Hispanic ethnicity described differences in participation rates in some programs in certain states. Meaningful comparisons in FRP meals programs participation rates could not be made by urbanicity due to missing data and the low proportion of rural schools in NKH SIF campaign target areas.

When doing school-level analyses, we were limited to the schools that we could match to publicly available data sources (National Center for Education Statistics, American Community Survey, and Census). We could not match administrative participation data and school characteristics data by site name for afterschool meals and snacks and summer meals. We attempted to match by ZIP code, but ZIP code was not always on the administrative data records. Urbanicity was linked to breakfast files by site name and to afterschool meals and snacks and summer meals by ZIP code. Immigrant population levels were matched to administrative data by ZIP code for all nutrition programs (school breakfast, afterschool meals and snacks, and summer meals) when ZIP code was available. School need, school type, and school ethnicity are school level variables, so were only considered for breakfast, as afterschool meals and snacks and summer meals did not occur exclusively at schools. Additional information on these limitations can be found in table footnotes.

School Need

School need is a predictable descriptor of changes in school breakfast participation rates in the NKH SIF campaign target areas (**Table 22**). During the 2014–2015 school year, FRP school breakfast participation rate within each NKH SIF campaign target area was higher in high-eligibility schools (those with at least 60% students FRP eligible) than in middle- or low-eligibility schools. This trend remained in the 2017–2018 school year after NKH SIF campaign implementation. Similar trends are seen when comparing these data for the fall 2014 and fall 2018 semesters (Appendix H, Table 58). Fall 2014 participation rates were generally lower compared to the entire 2014–2015 school year. Fall 2018 participation rates were also generally lower than for the 2017–2018 school year. Fall 2018 data weren't available for Michigan and are district level for Wisconsin.

Table 22. Participation Rate^a for FRP School Breakfast in NKH SIF Campaign Target Areas, by School Need Level^b

State, Need	NKH SIF Campaign Target Areas		
	2014–2015	2017–2018	Percent Change
Florida^c			
Low Eligibility (n=145)	36.7%	36.8%	0.5%
Middle Eligibility (n=189)	39.3%	41.6%	6.0%
High Eligibility (n=876)	48.4%	51.9%	7.2%
Michigan			
Low Eligibility (n=743)	52.1%	54.4%	4.4%
Middle Eligibility (n=232)	44.9%	46.3%	3.1%
High Eligibility (n=312)	57.0%	58.6%	2.9%
Nevada			
Low Eligibility (n=60)	30.5%	37.0%	21.2%
Middle Eligibility (n=59)	31.9%	35.2%	10.3%
High Eligibility (n=216)	60.9%	71.1%	16.8%
Texas^c			
Low Eligibility (n=7)	46.0%	35.3%	-23.2%
Middle Eligibility (n=39)	39.5%	38.0%	-3.7%
High Eligibility (n=522)	62.3%	69.4%	11.4%
Washington			
Low Eligibility (n=235)	36.1%	37.1%	3.0%
Middle Eligibility (n=75)	39.6%	43.0%	8.5%
High Eligibility (n=137)	48.8%	54.0%	10.7%
Wisconsin			
Data are district level, so cannot assign school-level variables			

Source: Table 58 from Administrative Data Analysis 2014–2015 vs 2017–2018 (Appendix G)

- a FRP school breakfast participation rate is a function of FRP school lunches served (Breakfast = FRP breakfast ADP/FRP school lunches served)
- b Need level was determined by the percentage of FRP-eligible students: low eligibility is <40% FRP enrolled, middle eligibility is 40–59% FRP enrolled, high eligibility is > 60% FRP enrolled. Need level was available for 97% or more of the data from all states except for Nevada. In Nevada, 56% of the data in the 2014–2015 school year were linked to a need level, but in 2017–2018 that increased to 93%.
- c September and October breakfast and lunch data for the entire state were excluded from both years due to hurricanes in the fall of the 2017–2018 school year.

School Type

School type (elementary, middle, high) is a predictable descriptor of changes in school breakfast participation rates in the NKH SIF campaign target areas (**Table 23**). Across all states, school breakfast participation rates prior to intervention were highest in elementary schools, and this remained constant after NKH SIF campaign implementation, but elementary schools did not achieve the largest increases in participation throughout program implementation. School breakfast participation rates consistently increased most in high schools; in all state NKH SIF Campaign Target Areas except those in Florida and Washington. The lack of large increases in high school breakfast participation in Washington could be because school breakfast participation rates in high schools were already as high as in elementary schools at baseline (46%). In Florida, the increase was larger, but not as large as in middle schools, which started with the lowest participation at baseline. Similar trends are seen when comparing these data for the fall 2014 and fall 2018 semesters (Appendix H, Table 53). Fall 2014 participation rates were similar to the entire 2014-2015 school year. Fall 2018 participation rates were also similar to the 2017-2018 school year. Fall 2018 data weren't available for Michigan and are district level for Wisconsin.

Table 23. Participation Rate^a for FRP Breakfast in NKH SIF Campaign Target Areas, By School Type^b

State, School Type	NKH SIF Campaign Target Areas		
	2014–2015	2017–2018	Percent Change
Florida^c			
Elementary (n=650)	51.2%	53.0%	3.5%
Middle (n=193)	39.2%	44.9%	14.6%
High (n=165)	42.6%	47.3%	11.1%
Michigan			
Elementary (n=607)	65.5%	67.2%	2.5%
Middle (n=175)	37.0%	38.2%	3.3%
High (n=195)	38.6%	40.9%	5.9%
Nevada			
Elementary (n=222)	63.9%	72.5%	13.5%
Middle (n=58)	41.8%	42.6%	1.9%
High (n=45)	43.6%	52.5%	20.6%
Texas^c			
Elementary (n=363)	73.9%	79.8%	7.9%
Middle (n=108)	51.2%	53.0%	3.4%
High (n=74)	33.1%	37.8%	14.1%
Washington			
Elementary (n=258)	45.5%	49.4%	8.6%
Middle (n=60)	32.7%	36.3%	10.8%
High (n=53)	46.0%	49.1%	6.8%
Wisconsin			
Data are district level, so could not assign school-level variables.			

Source: Table 53 from Administrative Data Analysis 2014-2015 vs 2017-2018 (Appendix G)

- ^a FRP school breakfast participation rate is a function of FRP school lunches served (Breakfast = FRP breakfast ADP/FRP school lunches served)
- ^b School type was provided on the breakfast and lunch administrative data records. We were able to match more than 90% of schools to school type in all states other than Michigan and Washington. In those two states, about 12% of schools could not be matched to school type.
- ^c September and October breakfast and lunch data for the entire state were excluded from both years due to hurricanes in the fall of the 2017-2018 school year.

Hispanic Ethnicity

Hispanic ethnicity is not a predictable descriptor of changes in school breakfast participation rates in the NKH SIF campaign target areas (**Table 24**). This is in contrast to survey data findings (Table 27), which show that if a child was Hispanic, the number of days they participated in school breakfast was likely to be lower. Survey groups were from schools in Florida, Wisconsin, and Michigan. The difference whether Hispanic Ethnicity is a predictor of breakfast participation between administrative data and survey data could be due to differences in the populations (campaign area vs. individual school), missing administrative data (see Table 24 footnote b), or other factors. For example, Hispanic ethnicity could be related to need level or other variables that may affect participation.

Florida and Texas have a majority of schools with high Hispanic populations in their NKH SIF campaign target areas, which is expected given the demographics of each state, while Michigan and Washington have fewer schools with high Hispanic populations. School breakfast participation rates increased more in the high Hispanic population schools compared to the low Hispanic population schools in Florida and Washington. Both Michigan and Texas saw similar increases in school breakfast participation rates when comparing their low and high Hispanic population schools.

Similar trends are seen when comparing these data for the fall 2014 and fall 2018 semesters (Appendix H, Table 64). Fall 2018 data weren't available for Michigan and are district level for Wisconsin.

Table 24. Participation Rate^a for FRP School Breakfast in NKH SIF Campaign Target Areas, by School Hispanic/Latino Population Level^b

State, Ethnicity	NKH SIF Campaign Target Areas		
	2014–2015	2017–2018	Percent Change
Florida^c			
Low Hispanic Population (n=249)	51.8%	53.2%	2.6%
High Hispanic Population (n=459)	43.2%	45.6%	5.5%
Michigan			
Low Hispanic Population (n=1126)	51.2%	52.8%	3.3%
High Hispanic Population (n=67)	61.1%	64.2%	5.1%
Nevada			
Data not available ^d			
Texas^c			
Low Hispanic Population (n=66)	63.7%	71.0%	11.4%
High Hispanic Population (n=335)	60.1%	65.2%	8.5%
Washington			
Low Hispanic Population (n=185)	46.0%	47.4%	3.0%
High Hispanic Population (n=42)	45.7%	52.5%	14.8%
Wisconsin			
Data are district level, so could not assign school-level variables			

Source: Table 64 from Administrative Data Analysis 2014-2015 vs 2017-2018 (Appendix G)

- ^a FRP school breakfast participation rate is a function of FRP school lunches served (Breakfast = FRP breakfast ADP/FRP school lunches served).
- ^b Low Hispanic population is <30%, high Hispanic population is ≥30%. Matching Hispanic population to school proved challenging. We were only able to match 64% of schools in Florida, 29% of schools in Nevada (data not presented), 66% of schools in Texas, and 56% of schools in Washington. Michigan had the highest match rate of 91%.
- ^c September and October breakfast and lunch data for the entire state were excluded from both years due to hurricanes in the fall of the 2017-2018 school year.
- ^d ZIP code data necessary to match Hispanic population to school in Nevada were either not available or available for only a small proportion of schools.

Immigrant Population

Lack of consistent trends and missing ZIP code data mean immigrant population is not a predictable descriptor of FRP meals program participation in this analysis. Some differences in the participation rates in FRP meals programs between schools with low and high immigrant populations were observed in certain states (Nevada for breakfast, Texas for afterschool meals and snacks, and Michigan for summer meals; **Table 25**). However, ZIP code data for some or all schools were missing for Florida, Wisconsin, and Nevada, and we were not able to match enough schools to ZIP-code-level immigrant population levels to conduct this analysis for those states. The proportion of foreign-born students may be related to other factors that affect eligibility for or participation in FRP meals programs. Corresponding data for fall 2014 and fall 2018 could not be compared due to lack of zip code data for fall 2018. Only two states had fall 2018 breakfast data with zip codes. Zip code data was missing for the majority or all afterschool and summer sites in fall 2018 data.

Breakfast: Differences in FRP school breakfast participation rate between low and high immigrant population schools were seen in the NKH SIF campaign target areas in Nevada only (Table 25). There was a slightly larger percent increase in FRP school breakfast participation rate in high immigrant population schools (8% increase vs 1%) during implementation in Washington only. We could not complete the immigrant population analysis for FRP school breakfast participation for Florida or Wisconsin data.

Afterschool Meals and Snacks: Differences in FRP afterschool meals and snacks participation rate between low and high immigrant population schools were seen in the NKH SIF campaign target areas in Texas and Washington, but not in other states with available data (Table 25). In Texas, FRP afterschool meals and snacks participation rate was lower in high immigrant population schools (19%) compared to low immigrant population schools (22%). FRP afterschool meals and snacks participation rate declined between 2014–2015 and 2017–2018 in the high immigrant population schools (19% to 12%) but increased slightly (22% to 23%) in the low immigrant population schools. In Washington, FRP afterschool meals and snacks participation rate was higher in the NKH SIF campaign target area schools with high immigrant populations prior to the intervention (7% vs. 0%) and this difference remained in the 2017–2018 school year (7% vs. 1%). However, nearly all the afterschool meals and snacks sites in the Washington NKH SIF campaign target area (King County) had high immigrant populations, so this trend is not generalizable.

Summer Meals: Differences in FRP summer meals participation rates between low and high immigrant population sites were seen in the NKH SIF campaign target areas in Michigan but not in other states with available data (Table 25). In Michigan target areas, summer meals programs at sites with low immigrant populations had higher participation rates overall at baseline (19%, Table 25) than high immigrant population sites (10%). However, during campaign implementation between 2014–2015 and 2017–2018 school years, FRP summer meals participation rate declined from 19% to 13% in the low immigrant population sites. By contrast, there was a much smaller decrease in participation rate in the high immigrant population sites (10% to 9%).

Table 25. Participation Rate^a for FRP School Breakfast, Afterschool Meals and Snacks, and Summer Meals^b in NKH SIF Campaign Target Areas, by Immigrant Population^c

Program State, Immigrant Population	NKH SIF Campaign Target Areas		
	2014–2015 % (n)	2017–2018 % (n)	Percent Change
Breakfast			
Florida			
Data not available ^e			
Michigan			
Low Immigrant Population	52.1% (879)	54.3% (880)	4.3%
High Immigrant Population	52.8% (389)	53.6% (388)	1.5%
Nevada			
Low Immigrant Population	37.7% (91)	42.0% (91)	11.3%
High Immigrant Population	57.9% (269)	65.5% (269)	13.2%
Texas^d			
Low Immigrant Population	58.6% (47)	64.1% (48)	9.4%
High Immigrant Population	61.2% (488)	66.3% (487)	8.3%
Washington			
Low Immigrant Population	41.6% (56)	42.1% (56)	1.1%
High Immigrant Population	42.7% (383)	46.1% (383)	8.0%
Wisconsin			
Data are district level, so cannot assign school-level variables			
Afterschool			
Florida			
Data not available ^e			
Michigan			
Low Immigrant Population	11.3% (3058)	10.4% (3146)	-8.2%
High Immigrant Population	7.9% (1470)	7.7% (1479)	-2.5%
Nevada			
Data not available ^e			
Texas^d			
Low Immigrant Population	21.8% (368)	22.7% (654)	4.4%
High Immigrant Population	18.8% (4876)	12.3% (3672)	-34.8%
Washington			
Low Immigrant Population	0.03% (88)	0.7% (113)	2119%
High Immigrant Population	7.2% (2866)	7.4% (3023)	3.5%
Wisconsin			
Data are district level, so cannot assign school-level variables			

(continues)

Program State, Immigrant Population	NKH SIF Campaign Target Areas		
	2014–2015 % (n)	2017–2018 % (n)	Percent Change
Summer			
Florida			
Data not available ^e			
Michigan			
Low Immigrant Population	18.7% (1595)	12.7% (1567)	-32%
High Immigrant Population	10.3% (481)	8.9% (579)	-13.6%
Nevada			
Data not available ^e			
Texas^d			
Low Immigrant Population	47.7% (98)	17.0% (128)	-64.4%
High Immigrant Population	45.8% (1415)	18.1% (2574)	-60.4%
Washington			
Low Immigrant Population	5.6% (17)	6.5% (13)	16%
High Immigrant Population	13.3% (773)	14.2% (758)	6.3%
Wisconsin			
Data are district level, so cannot assign school-level variables			

Source: Table 61 from Administrative Data Analysis 2014-2015 vs 2017-2018 (Appendix G)

- a FRP school breakfast participation rate is a function of FRP school lunches served (Breakfast = FRP breakfast ADP/FRP school lunches served).
FRP Afterschool participation rate is a function of FRP school lunches served (CACFP at-risk suppers and snacks+ NSLP afterschool FRP snacks)/FRP school lunches served.
FRP summer meals participation rate is a function of FRP school lunches served (SFSP meals and snacks+ SSO meals and snacks)/(FRP school lunches served *170% more meals served)/167 school days) * 40 summer days). For Texas, the number of school days is reduced to 130 to account for the omission of September and October lunch data.
- b Summer data are from 2014 and 2018, except for Florida and Washington data, which are from 2015 and 2018.
- c Low immigrant population: <5% of students were non-citizens. High immigrant population: >5% of students were non-citizens.
- d September and October breakfast, lunch, and afterschool data for the entire state were excluded from both years due to hurricane in the fall of the 2017-2018 school year.
- e ZIP code data necessary to match immigrant population to school, afterschool meals and snacks sites, or summer sites (and thus meal program participation rate) were either not available or available for only a small proportion of schools in these states.

Urbanicity

Urbanicity is not a predictable descriptor of FRP meals program participation in this analysis. This may be due to missing data (see **Table 26** footnote c), the small number of rural schools in the NKH SIF campaign target areas, or some other factor.

Breakfast: Changes in FRP school breakfast participation rate from 2014–2015 to 2017–2018 sometimes differed between urban and rural schools in the four states with available data (Table 26), but rural schools made up a small proportion of the schools in the NKH SIF campaign target areas (1–10%), making the comparison of participation rate between urban and rural schools difficult. Data were unavailable for Nevada and Wisconsin. Fewer than 5% of the schools in Florida, Texas, and Washington were classified as rural. In Michigan, fewer than 10% of schools were classified as rural. Similar trends are seen when comparing these data for the fall 2014 and fall 2018 semesters (Appendix H, Table 45). Fall 2018 data weren't available for Michigan and are district level for Wisconsin.

Afterschool Meals and Snacks and Summer Meals: Changes in FRP afterschool meals and snacks participation rate and in FRP summer meals participation rate from 2014–2015 to 2017–2018 sometimes differed between urban and rural schools in the states with available data (Table 26), but rural schools made up a small proportion of the schools in the NKH SIF campaign

target areas (1–5%), making the comparison of participation rates between urban and rural schools difficult. Data were unavailable for Florida, Nevada, and Wisconsin. Fewer than 5% of the sites in Michigan, Texas, and Washington were classified as rural. Corresponding data for fall 2014 and fall 2018 could not be compared due to lack of zip code data for afterschool and summer sites in fall 2018 data.

Table 26. Participation Rate^a for FRP School Breakfast, Afterschool Meals and Snacks, and Summer Meals^b in NKH SIF Campaign Target Areas, by Urbanicity^c

State, Urbanicity	NKH SIF Campaign Target Areas				Rest of the State			
	n	2014– 2015 % (n)	2017– 2018 % (n)	Percent Change	n	2014– 2015 % (n)	2017– 2018 % (n)	Percent Change
Breakfast								
Florida^d								
Urban	682	46.0%	48.0%	4.4%	1323	51.4%	51.4%	0.1%
Rural	31	53.1%	52.6%	-0.9%	278	52.3%	52.3%	-0.1%
Michigan								
Urban	1098	52.4%	54.0%	3.1%	778	53.5%	57.8%	8.1%
Rural	102	49.5%	51.6%	4.2%	633	57.3%	59.6%	4.1%
Nevada								
Data not available ^e								
Texas^d								
Urban	397	60.7%	66.0%	8.8%	3750	63.8%	64.9%	1.9%
Rural	14	58.0%	64.5%	11.4%	1356	61.2%	63.3%	3.3%
Washington								
Urban	220	46.1%	49.5%	7.5%	739	43.9%	46.4%	5.6%
Rural	8	42.7%	41.1%	-3.9%	194	47.9%	47.9%	0%
Wisconsin								
Data are district level, so cannot assign school-level variables								
Afterschool								
Florida								
Data not available ^e								
Michigan								
Urban	4,300	10.2%	9.5%	-7.0%	1,901	5.3%	7.9%	48.4%
Rural	228	9.2%	9.1%	-0.1%	1,645	5.4%	7.7%	41.4%
Nevada								
Data not available ^e								
Texas^d								
Urban	5,244	19.0%	12.9%	-32.3%	23,980	11.2%	9.9%	-11.7%
Rural	0	NA ^e	NA ^e	NA ^e	2,853	7.4%	2.6%	-65.1%
Washington								
Urban	2,890	7.0%	7.3%	4.5%	8,681	5.9%	7.2%	23.7%
Rural	64	0.1%	0.6%	765%	2,336	3.8%	5.7%	47.8%
Wisconsin								
Data are district level, so cannot assign school-level variables								

(continues)

State, Urbanicity	NKH SIF Campaign Target Areas				Rest of the State			
	n	2014– 2015 % (n)	2017– 2018 % (n)	Percent Change	n	2014– 2015 % (n)	2017– 2018 % (n)	Percent Change
Summer								
Florida								
Data not available ^e								
Michigan								
Urban	2,016	16.1%	11.6%	-28.3%	985	13.2%	14.4%	9.2%
Rural	60	11.6%	9.4%	-18.8%	832	11.2%	11.3%	0.4%
Nevada								
Data not available								
Texas^d								
Urban	2,693	45.9%	18.0%	-60.8%	7,787	14.8%	9.7%	-34.7%
Rural	9	NA ^f	29.4%	NA ^f	992	8.1%	5.7%	-29.8%
Washington								
Urban	785	13.2%	14.1%	7.1%	1,316	8.8%	8.5%	-3.4%
Rural	5	2.6%	1.7%	-33.3%	343	7.4%	6.6%	-10.9%
Wisconsin								
Data are district level, so cannot assign school-level variables								

Source: Tables 45 (breakfast) and 48 (afterschool and summer) from Administrative Data Analysis 2014-2015 vs 2017-2018 (Appendix G)

- a FRP school breakfast participation rate is a function of FRP school lunches served (Breakfast = FRP breakfast ADP/FRP school lunches served).
- FRP afterschool participation rate is a function of FRP school lunches served (CACFP at-risk suppers and snacks + NSLP afterschool FRP snacks)/FRP school lunches served.
- FRP summer meals participation rate is a function of FRP school lunches served (SFSP meals and snacks + SSO meals and snacks)/(FRP school lunches served *170% more meals served)/167 school days) * 40 summer days). For Florida and Texas, the number of school days is reduced to 130 to account for the omission of September and October lunch data.
- b Summer data are from 2014 and 2018, except for Florida and Washington data, which are from 2015 and 2018.
- c Urbanicity was determined using publicly available data by school for school breakfast (National Center for Education Statistics 2016-2017 data) and by ZIP code for afterschool meals and snacks and summer meals (2010 Census data). ZIP codes were classified as urban if more than 60% of the housing units in that ZIP code were urban. Matching urbanicity to schools and sites proved challenging. We were only able to match 64% of schools in Florida, 29% of schools in Nevada (data not presented due high percentage of missing data), 69% of schools in Texas, and 56% of schools in Washington to urbanicity data; Michigan had the highest match rate of 92%. We faced more challenges in matching data for afterschool and summer meal programs when using site name. There was no ZIP code data for afterschool for Florida. The afterschool ZIP codes for Nevada were 86% missing in 2014–2015 and all missing in 2017–2018. There were no ZIP code data for summer for either year for Wisconsin. In Nevada, 80% were missing in Summer 2014 and 25% were missing in Summer 2018.
- d September and October breakfast, lunch, and afterschool data for the entire state were excluded from both years due to hurricanes in the fall of the 2017-2018 school year.
- e ZIP code data necessary to match urbanicity to school were either not available or only available for <50% of schools.
- f Fewer than 1% of sites for afterschool and summer meals in campaign target areas in Texas were classified as rural, so data are not shown.



Sub-question 1c: Do participant characteristics affect participation in school breakfast, afterschool meals and snacks, and summer meals?

The remaining results presented to answer sub-questions 1c, 1d, and all of Question 2 rely on survey data because individual-level data are required to answer questions about participants and these questions could not be answered using the administrative data.

We focus the results of this sub-question on participation in school breakfast because there were no participant characteristics that were statistically significantly correlated with student participation in afterschool meals and snacks or summer meals. While participation in afterschool meals and snacks and summer meals was lower than school breakfast, we believe there were enough main study respondents for this analysis.

Factors that influenced the number of days that survey respondents in the main study ate breakfast at school included the number of adults and children in the household, the education level of the parents, and the race and ethnicity of the children (**Table 27**). Whether the child was in an intervention or control school or whether they were interviewed at baseline or follow-up did not significantly influence the number of days they ate at school. Likewise, the child's grade in school, whether they participated in WIC or SNAP, the type of home they lived in (house or apartment), whether their parents were employed, the household income, or their gender did not significantly influence the number of days the child ate breakfast at school.

Table 27. Summary of Model Results for Average Number of Days a Child Eats School Breakfast, by Participant Characteristic

Participant Characteristic	Number of days child eats school breakfast is...		p-value
	Higher	Lower	
Adults in household	1 adult in household	2 or more adults in household	0.0019**
Children under 18	More than 3 children under 18	3 or fewer children under 18	0.0003**
Parent educational attainment	Parent with no school or some high school, completed college degree	Parent with special education, high school degree/GED, or some college	0.0040**
Race/Ethnicity	Child not Hispanic	Child Hispanic	0.0159*
	Child African American	Child not African American	0.0051**

Source: Table 9 from Survey Data Analysis (Appendix I)

* The difference in the number of days a child eats school breakfast between those with participant characteristics in the two columns is statistically significant at the .05 level.

**The difference in the number of days a child eats school breakfast between those with participant characteristics in the two columns is statistically significant at the .01 level.

Table 27 presents the household factors that are most strongly correlated with the average number of days a child eats breakfast. All results are significant at the $p < 0.01$ level, except for Hispanic ethnicity of child, which is significant at the $p < 0.05$ level. As the number of adults in a household increases, the number of days a child eats breakfast at school decreases. As the number of children in a household decreases below 3, the number of days a child eats breakfast at school decreases. There was not a clear pattern between the parental educational attainment and the number of days a child eats breakfast at school. Identifying as Hispanic was correlated with eating school breakfast less often. Identifying as African American was correlated with eating school breakfast more often. These findings are mostly consistent with research examining determinants of participation in the School Breakfast Program,⁵⁶ though this study found mixed results regarding the number of adults in the household and participation in the program to be consistently higher among children whose parents had a lower education level. The study also found that children with access to the School Breakfast Program were more likely to eat breakfast. Others have also found racial and ethnic differences, with the highest SBP participation among African American students.⁵⁷



Sub-question 1d: Does participation in one federal nutrition program support participation in other federal nutrition programs?

To measure the extent to which children who participate in one program (e.g., FRP school breakfast) also participate in another one (e.g., FRP School Lunch), we calculated correlations between each pair of programs (**Table 28**).

Participation in Table 28 is defined as:

- FRP school breakfast ("breakfast"): Respondent reported receiving the breakfast(s) for free or at a reduced price.
- FRP school lunch ("lunch"): Respondent reported receiving the lunch(es) for free or at a reduced price.
- FRP afterschool meals and snacks ("afterschool"): Respondent reported attending an afterschool program in the last 30 days and receiving the meal(s) and/or snack(s) for free.
- FRP summer meals ("summer"): Respondent reported getting at least one free meal at school or a summer program site during the summer prior to the interview.

While participation in FRP afterschool meals and snacks and FRP summer meals was lower than FRP school breakfast, we believe there were enough main study respondents to assess correlations between each pair of programs.

A correlation value of 1 between two programs would indicate that children are likely to participate in both programs. A series of high correlations (generally considered > 0.5) for a given intervention would suggest that program participation is self-propagating.

There is not clear evidence in this evaluation that program participation is self-propagating. In the main study intervention schools, there was a moderate ($0.3 < 0.5$) correlation of children reporting eating both FRP afterschool and summer meals (0.35) at follow-up (Table 28). In the main study control schools, there was a high correlation of children reporting eating both FRP breakfast and lunch (0.60).

Table 28. Correlations among Reported Participation in Nutrition Programs in Main Study Schools at Follow-up, Fall 2018

Intervention	Breakfast: Lunch	Breakfast: Afterschool	Breakfast: Summer	Lunch: Afterschool	Lunch: Summer	Afterschool: Summer
Main study: Intervention (n=106)	0.13	0.21	0.22	-0.05	0.01	0.35
Main study: Control (n=123)	0.60	-0.07	-0.01	-0.02	0.10	0.09

Source: Table 74-75 from Survey Data Analysis

Question 2: Is the NKH SIF campaign leading to decreases in childhood hunger?

Question 2 builds on the results of Question 1 to evaluate the three other components of childhood hunger assessed in this evaluation and thus contains three component sub-questions:

- **Sub-question 2a:** Do study participants influenced by campaign strategies have improved food security?
- **Sub-question 2b:** Do study participants influenced by campaign strategies consume more meals and/or snacks?
- **Sub-question 2c:** Do study participants influenced by campaign strategies consume healthier foods?

To answer sub-questions 2a–c, we used survey data collected for the impact evaluation at the nine main and ancillary study elementary schools, because these questions are related to individual participants. We looked for statistically significant differences between the main study intervention and control groups, specifically comparing changes (baseline to follow-up) in school-level measures of child hunger. We also present and discuss interesting but non-statistically significant trends in data and trends seen across all students influenced by the NKH SIF campaigns (main study intervention and ancillary study intervention schools combined), these results are not intended to contribute to the level of evidence.

All percentages presented in the following tables under Question 2 are weighted to account for the differing sample sizes of respondents in the different intervention groups and between baseline and follow-up. The sample sizes (n) presented in the following tables show the number of survey respondents who answered the related survey question.

❖ Sub-question 2a: Do study participants influenced by campaign strategies have improved food security?

To measure the correlation between the NKH SIF campaign implementation and changes in food security, we developed food security scores using a well-established and validated series of questions related to the food security of the children (8 questions) and of the adults (10 questions) in the survey respondent's household.⁵⁸ The answers to these food security questions were categorized in three groups. The child food security score categories were:

- **Low food security score:** Two or more questions about food insecurity answered in the affirmative.
- **Marginal food security score:** One question about food insecurity answered in the affirmative.
- **High food security score:** No questions about food insecurity answered in the affirmative.

The adult food security score categories were:

- **Low food security score:** Three or more questions about food insecurity answered in the affirmative.
- **Marginal food security score:** One or two questions about food insecurity answered in the affirmative.
- **High food security score:** No questions about food insecurity answered in the affirmative.

There were no statistically significant differences between the child food security scores in the main study intervention and control groups at either timepoint (**Table 29**). Likewise, neither the intervention nor the control group's child food security scores statistically significantly changed during the intervention period. However, there were interesting trends in the data.

Table 29. Distribution of Study Participants, by Main Study Intervention Group and Child Food Security Score

Intervention, Child Food Security Score	Baseline	Follow-Up	Percent Change	Effect Size ^a
Main Study: Intervention	n=123	n=106		
Low food security score	24%	23%	-6%	<0.05
Marginal food security score	14%	23%	60%	0.2
High food security score	61%	55%	-11%	0.1
Main Study: Control	n=125	n=123		
Low food security score	15%	23%	57%	0.2
Marginal food security score	18%	18%	2%	<0.05
High food security score	68%	58%	-13%	0.2

Source: Tables 20-22 from Survey Data Analysis (Appendix I)

^a An effect size of 0.2 is generally regarded as small, 0.5 as medium, and 0.8 as large. Statistical power increases with an increase in the effect size, making it more likely that statistical significance is obtained.

* The difference between this estimate and the baseline estimate is statistically significant at the .05 level.

** The difference between this estimate and the baseline estimate is statistically significant at the .01 level.

‡ The main study intervention and main study control values at this time point are statistically significantly different from each other at the .05 level.

First, it appears that respondents at schools in the main study intervention schools had lower food security on average compared to the main study control school respondents at baseline (Table 29). For example, 24% of main study intervention respondents had a low child food security score at baseline, while only 15% of main study control students did. At follow-up, however, the proportion of respondents with a low child food security score was similar in both groups (23%). The difference in the schools at baseline does not affect our ability to compare these groups to each other at the different time points or to compare each group to itself pre-post intervention. While the main study intervention and control schools were matched on school characteristics and FRP school meal eligibility, it makes sense that the schools in the areas that the NKH SIF campaign was targeted were those with potentially higher food insecurity and hunger.

Second, in the control group, child food security scores shifted from the high to the low categories. The proportion of main study control respondents with a high food security score decreased from 68% to 58%, while the proportion with a low food security score increased from 15% to 23%. There was also a downward shift in the main study intervention respondents, but it was less drastic: child food security scores shifted from the high and low categories to the marginal categories. The proportion of main study control respondents with a high food security score decreased from 61% to 55%, while the proportion with a marginal food security score increased from 14% to 23%. A similar trend was seen when looking at the results from respondents in all six schools receiving the intervention (main and ancillary study intervention schools combined, Table 30).

Table 30. Distribution of Study Participants in Main and Ancillary Study Intervention Schools Combined, by Child Food Security Score

Food Security Score	Baseline n=226	Follow-Up n=174	Percent Change	Effect Size ^a
Low food security score	22%	20%	-10%	0.1
Marginal food security score	14%	19%	39%	0.1
High food security score	64%	61%	-4%	0.1

Source: Tables 20-22 from Survey Data Analysis (Appendix I)

^a An effect size of 0.2 is generally regarded as small, 0.5 as medium, and 0.8 as large. Statistical power increases with an increase in the effect size, making it more likely that statistical significance is obtained.

* The difference between this estimate and the baseline estimate is statistically significant at the .05 level.

** The difference between this estimate and the baseline estimate is statistically significant at the .01 level.

These two trends, while they are not statistically significant, indicate that the NKH SIF campaign may have had a protective effect on the students in the NKH SIF campaign target area schools that dampened the negative impacts of food insecurity seen in the control schools and even in adults in the intervention school households.

There were no statistically significant differences between the adult food security scores in the main study intervention and control groups at either timepoint (**Table 31**). In both the main study intervention and control groups, there was a non-significant downward shift in food security score, with few respondents reporting high or marginal food security scores, and more respondents indicating low food security.

Table 31. Distribution of Study Participants, by Main Study Intervention Group and Adult Food Security Score

Intervention, Adult Food Security Score	Baseline	Follow-Up	Percent Change	Effect Size ^a
Main Study: Intervention	n=123	n=106		
Low food security score	23%	31%	32%	0.2
Marginal food security score	28%	25%	-13%	0.1
High food security score	48%	45%	-7%	0.1
Main Study: Control	n=125	n=123		
Low food security score	20%	33% ^a	67%	0.3
Marginal food security score	27%	17%	-38%	0.2
High food security score	53%	47%	-11%	0.1

Source: Tables 23-25 from Survey Data Analysis (Appendix I)

^a An effect size of 0.2 is generally regarded as small, 0.5 as medium, and 0.8 as large. Statistical power increases with an increase in the effect size, making it more likely that statistical significance is obtained.

* The difference between this estimate and the baseline estimate is statistically significant at the .05 level.

** The difference between this estimate and the baseline estimate is statistically significant at the .01 level.

‡ The main study intervention and main study control values at this time point are statistically significant from each other at the .05 level.

A similar trend was seen when looking at the results from respondents in all six schools receiving the intervention (main and ancillary study intervention schools combined, **Table 32**). However, in the main study control group, this shift appears more drastic. The proportion of respondents indicating low adult food security significantly increased from 20% to 33% from baseline to follow-up (Table 31). This result is reiterated in the average number of affirmative responses to adult food security questions (**Table 33**), which significantly increased from 3.18 to 4.32, with a moderate effect size of 0.4, in the control group during the intervention period. These results indicate that the NKH SIF campaign may have had a protective effect on the whole families in the NKH SIF campaign target area schools that dampened the negative impacts of child and adult food insecurity seen in the control schools.

Table 32. Distribution of Study Participants in Main and Ancillary Study Intervention Schools Combined, by Adult Food Security Score

Food Security Score	Baseline n=226	Follow-Up n=174	Percent Change	Effect Size ^a
Low food security score	23%	28%	26%	0.1
Marginal food security score	26%	23%	-11%	0.1
High food security score	50%	48%	-3%	<0.05

Source: Tables 23-25 from Survey Data Analysis (Appendix I)

^a An effect size of 0.2 is generally regarded as small, 0.5 as medium, and 0.8 as large. Statistical power increases with an increase in the effect size, making it more likely that statistical significance is obtained.

* The difference between this estimate and the baseline estimate is statistically significant at the .05 level.

** The difference between this estimate and the baseline estimate is statistically significant at the .01 level.

Table 33. Average Number of Affirmative Responses in Food Security Questions among Respondents Who Selected at least One Affirmative Response, by School and Intervention

Intervention and School	Child Food Security Questions				Adult Food Security Questions			
	Base-line	Follow-up	Percent Change	Effect Size ^a	Base-line	Follow-up	Percent Change	Effect Size ^a
Main Study: Intervention	2.19	1.76	-19%	0.3	2.96	3.05	3%	<0.05
Main Study: Control	1.76	1.86	6%	0.1	3.18	4.32*	36%	0.4

Source: Tables 17 and 19 from Survey Data Analysis (Appendix I)

^a An effect size of 0.2 is generally regarded as small, 0.5 as medium, and 0.8 as large. Statistical power increases with an increase in the effect size, making it more likely that statistical significance is obtained.

* The difference between this estimate and the baseline estimate is statistically significant at the .05 level.

**The difference between this estimate and the baseline estimate is statistically significant at the .01 level.



Sub-question 2b: Do study participants influenced by campaign strategies consume more meals and/or snacks?

To measure whether students in intervention schools consumed more meals and/or snacks, we used survey respondents' self-reported consumption of meals at different times and locations. We present the survey data both in terms of the average number of meals consumed per week and the average number of missed meals per week. We also include responses to the select food security questions related to missed meals and not eating enough food.

At baseline, main study intervention respondents reported eating breakfast at school significantly less often than the control group (**Table 34**). However, the number of days a child in the intervention school ate breakfast at school increased during the intervention, and at follow-up the intervention and control groups were similar.

At baseline, main study respondents from interventions schools who ate breakfast at school at least once in the last week, ate school breakfast significantly fewer times per week compared to respondents in main study control schools (3.85 vs. 4.64 days per week, $p < 0.05$, Table 34). At follow-up, the interventions school respondents reported eating breakfast at school more often (4.25 days at follow-up vs. 3.85 days at baseline), and the intervention and control group were no longer statistically significantly different. Similar to the food security results presented in Question 2a, this indicates that the intervention school respondents had more indications of child hunger than control school respondents at baseline, but that they "caught up" during NKH SIF campaign implementation.

Table 34 only includes children who reported eating school breakfast at least one day in the past week. If parents reported that their child did not eat breakfast at school at all during the past week, they were asked why (Appendix G, Table 55). The most common responses from parents of students in main and ancillary study intervention schools together at the follow-up interview included that they felt it was the parents responsibility to provide breakfast (20%), that the child disliked the school breakfast (22%), and that the child arrived too late to eat breakfast at school (27%). Although BAB takes place after school begins, this could indicate an issue with proper communication or implementation of BAB at the intervention schools in this evaluation.

There were no statistically significant differences in the number of days children ate afterschool meals or snacks, either between the main study groups or over time (Table 34). The limited number of main study control group respondents who reported eating afterschool meals and snacks limits our ability to make comparisons between intervention groups for afterschool meals and snacks.

Interestingly, we see a trend opposite to that of school breakfast when we look at the number of days children eat summer meals (Table 34). Respondents in the main study intervention schools reported eating significantly more summer meals per week than their control counterparts (4.31 vs. 3.23 summer meals per week, $p < 0.05$, Table 34). There was a statistically significant increase

in the number of summer meals eaten in the control group during the intervention period (3.23 to 4.4 summer meals per week, Table 34; $p < 0.05$, effect size of 0.8, but based on a relatively small number of responses, 13–16), and at follow-up, the intervention and control groups were similar.

Table 34. Average Number of Days^a Child Eats at School or Community Site Per Week, by Program and Intervention

Program, Intervention	Baseline	Follow-Up	Percent Change	Effect Size ^b
School Breakfast	Days (n)	Days (n)		
Main study: Intervention	3.85 _‡ (89)	4.25 (78)	10%	0.3
Main study: Control	4.64 _‡ (97)	4.43 (101)	-4%	0.2
Afterschool Meals and Snacks				
Main study: Intervention	4.47 (22)	4.06 (18)	-9%	0.4
Main study: Control	3.43 (5)	3.58 (8)	5%	0.1
Summer Meals				
Main study: Intervention	4.31 _‡ (23)	4.35 (25)	1%	<0.05
Main study: Control	3.23 _‡ (16)	4.4 ^a (13)	36%	0.8

Source: Table 1, 3, 4 from Survey Data Analysis (Appendix I)

^a Average number of days is among children who ate at school at least 1 day in the past week.

^b An effect size of 0.2 is generally regarded as small, 0.5 as medium, and 0.8 as large. Statistical power increases with an increase in the effect size, making it more likely that statistical significance is obtained.

* The difference between this estimate and the baseline estimate is statistically significant at the .05 level.

**The difference between this estimate and the baseline estimate is statistically significant at the .01 level.

‡ The main study intervention and main study control values at this time point are statistically significant from each other at the .05 level.

Fewer main study intervention respondents indicated missing fewer meals in the past week than the control group at follow-up (0.42 vs. 1.12 missed meals in the past week, $p < 0.05$, **Table 35**).

Table 35. Average Number of Missed Meals in the Past Week, by Intervention

Intervention	Baseline (n)	Follow-Up (n)	Percent Change	Effect Size ^a
Main study: Intervention	1.12 (122)	0.42 (106) ^{*‡}	-62%	0.3
Main study: Control	0.85 (125)	1.12 (123) _‡	32%	0.2

Source: Tables 36 from Survey Data Analysis (Appendix I)

^a An effect size of 0.2 is generally regarded as small, 0.5 as medium, and 0.8 as large. Statistical power increases with an increase in the effect size, making it more likely that statistical significance is obtained.

* The difference between this estimate and the baseline estimate is statistically significant at the .05 level.

**The difference between this estimate and the baseline estimate is statistically significant at the .01 level.

‡ The main study intervention and main study control values at this time point are statistically significant from each other at the .05 level.

Specifically, main study intervention respondents indicated missing fewer breakfasts in the past week than the control group at follow-up (0.24 vs. 0.71 missed breakfasts in the past week, $p < 0.05$, **Table 36**). After the intervention observation period, the main study intervention respondents reported missing fewer meals (1.12 to 0.42 missed meals in the past week) and fewer missed breakfasts (0.78 to 0.24 missed breakfasts in the past week), both statistically significant declines ($p < 0.05$).

Table 36. Average Number of Missed Breakfasts in the Past Week, by Intervention

Intervention	Baseline (n)	Follow-Up (n)	Percent Change	Effect Size ^a
Main study: Intervention	0.78 (122)	0.24 (106)** ‡	-69%	0.3
Main study: Control	0.47 (125)	0.71 (123)	52%	0.2

Source: Tables 37 from Survey Data Analysis (Appendix I)

- ^a An effect size of 0.2 is generally regarded as small, 0.5 as medium, and 0.8 as large. Statistical power increases with an increase in the effect size, making it more likely that statistical significance is obtained.
- * The difference between this estimate and the baseline estimate is statistically significant at the .05 level.
- ** The difference between this estimate and the baseline estimate is statistically significant at the .01 level.
- ‡ The main study intervention and main study control values at this time point are statistically significant from each other at the .05 level.

Significantly more main study intervention respondents indicated their child was missing meals or not eating enough compared to control schools at baseline (16% vs. 6%, $p < 0.05$, **Table 37**), but at follow-up these proportions were the same (9% in both groups), showing the intervention respondents improving and “catching” up to the control group over the course of the intervention.. These data combined indicate that students in the main study intervention group had improved indicators of meal and snack consumption, specifically related to breakfast, compared to the control group over the intervention period.

Table 37. Percentage of Respondents Who Indicated That Their Child Was Missing Meals or Not Eating Enough^a in the Past 30 Days, by Intervention

Intervention	Baseline (n)	Follow-up (n)	Percent Change	Effect Size ^b
Main Study: Intervention	16% (123) ‡	9% (106)	-45%	0.2
Main Study: Control	6% (125) ‡	9% (123)	37%	0.1

Source: Table 35 from Survey Data Analysis (Appendix I)

- ^a Caregiver indicated at least one of the following in the past 30 days: child was not eating enough, they cut their child's meals, because there was not enough money for food the child skipped at least 3 meals, child did not eat when they were hungry, child did not eat for a whole day.
- ^b An effect size of 0.2 is generally regarded as small, 0.5 as medium, and 0.8 as large. Statistical power increases with an increase in the effect size, making it more likely that statistical significance is obtained.
- * The difference between this estimate and the baseline estimate is statistically significant at the .05 level.
- ** The difference between this estimate and the baseline estimate is statistically significant at the .01 level.
- ‡ The main study intervention and main study control values at this time point are statistically significant from each other at the .05 level.

A larger proportion of study participants in the intervention group consumed a nutritionally sufficient breakfast after the intervention ($p < 0.05$, **Table 38**); for this analysis, we defined a nutritionally sufficient breakfast as consumption of foods from at least two of five main food groups and breakfast intake of food energy greater than 10% of the Recommended Dietary Allowance (RDA). In the main study intervention group, the percentage increased from 66% at baseline to 80% at follow-up, while the percentage declined in the control group. This result suggests that students in the intervention groups were consuming more and more varied food at breakfast.

Table 38. Percent of Children Consuming a Nutritionally Sufficient Breakfast^a from 24-Hour Diet Recall, by Intervention

Intervention	Baseline (n)	Follow-Up (n)	Percent Change	Effect Size ^b
Main Study: Intervention	66% (120) [‡]	80% (106) [*]	48%	0.3
Main Study: Control	80% (125) [‡]	74% (122)	-27%	0.1

Source: Tables 65 from Survey Data Analysis (Appendix I)

^a Nutritionally Sufficient Breakfast is defined as consumption of foods from at least two of five main food groups and breakfast intake of food energy greater than 10% of the RDA.

^b An effect size of 0.2 is generally regarded as small, 0.5 as medium, and 0.8 as large. Statistical power increases with an increase in the effect size, making it more likely that statistical significance is obtained.

^{*} The difference between this estimate and the baseline estimate is statistically significant at the .05 level.

^{**} The difference between this estimate and the baseline estimate is statistically significant at the .01 level.

[‡] The difference between the main study intervention and main study control values at this time point is statistically significant at the .05 level.

When survey respondents completed the 24-hour recall, they were asked where they ate each meal: at home, at school, or elsewhere (e.g., during transit to school). Interestingly, there was a statistically significant increase in the number of main study intervention group respondents who reported eating breakfast at both school and either home or elsewhere, from 9% at baseline to 20% at follow-up (Appendix I, Table 73). The main study control group had similar responses at baseline compared to follow-up. This indicates that students in the NKH SIF campaign target area schools were supplementing their breakfast from home with additional foods as part of FRP school breakfast.

To better understand the nutritional sufficiency of breakfasts consumed at different locations (home and school), we analyzed the location where children eating a nutritionally sufficient breakfast are eating breakfast. **Table 39A** shows the number of children who ate a nutritionally sufficient breakfast and the distribution of those by location. For children who reported eating breakfast foods at both home and school on the same day (the Home & School column in Table 39A), we calculated the proportion for whom the home foods alone did not meet our definition of a nutritionally sufficient breakfast (**Table 39B**). These students needed the foods they ate at school to supplement their home breakfast for it to meet our definition of a nutritionally sufficient breakfast.

Of children consuming a nutritionally sufficient breakfast in the main study intervention group, 48% ate breakfast only at school at baseline, and 23% ate breakfast only at school at follow up, a statistically significant decrease ($p < 0.05$, effect size 0.5; Table 39A). Of children in the main study intervention group who ate a nutritionally sufficient breakfast and ate breakfast foods at both home and school, the proportion who needed the additional school food to make their breakfast nutritionally sufficient increased from 14% at baseline to 32% at follow-up (Table 39B), but this increase was not statistically significant although the effect size was 0.5. These results indicate that although the proportion of children consuming a nutritionally sufficient breakfast increased from baseline to follow up (Table 38), the proportion of them who ate the nutritionally sufficient breakfast only at school decreased (Table 39A). However, the FRP breakfast meals at school may have helped some children eating breakfast at both home and school to consume a nutritionally sufficient breakfast who would not otherwise have done so.

Table 39A. Distribution of Breakfast Consumption Locations among Respondents Who Consumed a Nutritionally Sufficient Breakfast^a, by Intervention

Intervention	Baseline			Follow-up			Effect Size ^b				
	N ^c	Percent Eating Breakfast at...			N ^c	Percent Eating Breakfast at...			Percent Eating Breakfast at...		
		School Only ^d	Home Only ^d	Home & School ^d		School Only ^d	Home Only ^d	Home & School ^d	School Only ^d	Home Only ^d	Home & School ^d
Main study: Intervention	61	48%	40% [‡]	13%	68	23% ^{*‡}	51% [‡]	26%	0.5	0.2	0.3
Main study: Control	94	63%	21% [‡]	15%	64	69% [‡]	17% [‡]	14%	0.1	0.1	<0.05

Source: Table 76 from Survey Data Analysis (Appendix I)

- ^a Nutritionally Sufficient Breakfast is defined as consumption of foods from at least two of five main food groups and breakfast intake of food energy greater than 10 percent of the RDA.
- ^b An effect size of 0.2 is generally regarded as small, 0.5 as medium, and 0.8 as large. Statistical power increases with an increase in the effect size, making it more likely that statistical significance is obtained.
- ^c Number of students who ate a nutritionally sufficient breakfast, regardless of location.
- ^d Among students who ate a nutritionally sufficient breakfast, percentage that ate breakfast at school only, home only, or both home and school.
- ^{*} The difference between this estimate and the baseline estimate is statistically significant at the .05 level.
- ^{**} The difference between this estimate and the baseline estimate is statistically significant at the .01 level.
- [‡] The main study intervention and main study control values at this time point are statistically significant from each other at the .05 level.

Table 39B. Percentage of Students Who Ate Breakfast at Both Home and School Who Did Not Consume a Nutritionally Sufficient Breakfast^a at Home, by Intervention

Intervention	Baseline		Follow-up		Effect Size ^c
	N ^b	Did not eat Nutritionally Sufficient Breakfast at Home (%)	N ^b	Did not eat Nutritionally Sufficient Breakfast at Home (%)	
Main study: Intervention	9	14% [‡]	19	32%	0.5
Main study: Control	16	56% [‡]	7	58%	<0.05

Source: Table 76 from Survey Data Analysis (Appendix I)

- ^a Nutritionally Sufficient Breakfast is defined as consumption of foods from at least two of five main food groups and breakfast intake of food energy greater than 10 percent of the RDA
- ^b Number of students who ate a nutritionally sufficient breakfast who ate breakfast at home and at school.
- ^c An effect size of 0.2 is generally regarded as small, 0.5 as medium, and 0.8 as large. Statistical power increases with an increase in the effect size, making it more likely that statistical significance is obtained.
- ^{*} The difference between this estimate and the baseline estimate is statistically significant at the .05 level.
- ^{**} The difference between this estimate and the baseline estimate is statistically significant at the .01 level.
- [‡] The main study intervention and main study control values at this time point are statistically significant from each other at the .05 level.

❖ Sub-question 2c: Do study participants influenced by campaign strategies consume healthier foods?

To determine which children attending schools in NKH SIF campaign target areas were consuming healthier foods than their peers attending schools not in NKH SIF campaign target areas, we looked at two measures from the study participants' reports of what they ate in the past 24 hours: Healthy Eating Index scores and the total daily servings of foods in healthy food groups. We also reviewed the study participants' reports of the average number of times they ate certain healthy foods in the week prior to their FFQ (food frequency questionnaire) interview.

Students in the intervention group consumed healthier foods overall after the intervention, as indicated by a statistically significant improvement in their Healthy Eating Index scores from baseline to follow-up ($p < 0.05$, **Table 40**). These children had a significantly higher Healthy Eating Index score at follow-up compared to baseline, and this was not seen in the control group. In addition, there is some evidence that children in the main study intervention group consumed healthier foods than children in the control group. These results suggest that students in the intervention groups were consuming healthier foods overall after the intervention.

Table 40. Healthy Eating Index from 24-Hour Diet Recall, by Intervention

Intervention	Baseline (n)	Follow-Up (n)	Percent Change	Effect Size ^a
Main Study: Intervention	52.10 (120)	56.6 (106)*	8.6%	0.3
Main Study: Control	52.73 (127)	53.72 (123)	1.9%	0.1

Source: Table 48 from Survey Data Analysis (Appendix I)

- ^a An effect size of 0.2 is generally regarded as small, 0.5 as medium, and 0.8 as large. Statistical power increases with an increase in the effect size, making it more likely that statistical significance is obtained.
- * The difference between this estimate and the baseline estimate is statistically significant at the .05 level.
- ** The difference between this estimate and the baseline estimate is statistically significant at the .01 level.
- ‡ The main study intervention and main study control values at this time point are statistically significant from each other at the .05 level.

The results on the number of servings and number of times study participants reported eating foods from specific healthy food groups are different, and sometimes conflicting, between the 24-hour diet recall data and the FFQ (7-day) data. Therefore, we cannot draw conclusions about whether study participants influenced by campaign strategies consumed more or less of specific healthy foods. These conflicting results may also be attributable to the limitations of conducting FFQs or 24-hour diet recalls with young children, or that different time periods are being captured.

Children in main study intervention schools reported consuming significantly more total daily servings of whole grains in the past 24 hours (**Table 41**) at follow-up compared to baseline ($p < 0.01$) and compared to the control group at follow-up ($p < 0.05$, effect size 0.4). They also reported consuming slightly fewer total daily servings of starchy and dark green vegetables at follow-up compared to baseline ($p < 0.05$). Children in control schools did not report significantly different servings of healthy food groups between baseline and follow-up.

Table 41. Total Day Serving Equivalents for Healthy Food Groups from 24-Hour Diet Recall, by Intervention

Food Group, Intervention	Baseline (n) ^a	Follow-Up (n) ^a	Percent Change	Effect Size ^b
Milk (cups)				
Main Study: Intervention	1.63 (120)	1.67 (106)	2.5%	<0.05
Main Study: Control	1.68 (127)	1.64 (122)	-2.7%	<0.05
Fruit (cups)				
Main Study: Intervention	1.09	1.07	-1.9%	<0.05
Main Study: Control	1.00	1.26	26.0%	0.2
Vegetables (cups)				
Main Study: Intervention	0.90	0.82	-8.5%	0.1
Main Study: Control	0.77	0.91	18.3%	0.2
Red/orange vegetables (cups)				
Main Study: Intervention	0.24	0.26	8.2%	<0.05
Main Study: Control	0.21	0.26	21.2%	0.1
Legumes (beans/peas) (cups)				
Main Study: Intervention	0.06	0.20	221.5%	0.2
Main Study: Control	0.05	0.06	19.9%	<0.05
Starchy vegetables (cups)				
Main Study: Intervention	0.31	0.17*	-45.3%	0.3
Main Study: Control	0.22	0.31	41.0%	0.2
Dark green vegetables (cups)				
Main Study: Intervention	0.07	0.02*	-66.0%	0.3
Main Study: Control	0.07	0.05	-29.4%	0.1
Whole Grains (oz.)				
Main Study: Intervention	0.99	1.70** ‡	71.9%	0.4
Main Study: Control	1.28	0.95	-26.0%	0.1

Source: Tables 49, 51 from Survey Data Analysis (Appendix I)

^a Sample sizes for all food groups are the same as those for milk.

^b An effect size of 0.2 is generally regarded as small, 0.5 as medium, and 0.8 as large. Statistical power increases with an increase in the effect size, making it more likely that statistical significance is obtained.

* The difference between this estimate and the baseline estimate is statistically significant at the .05 level.

** The difference between this estimate and the baseline estimate is statistically significant at the .01 level.

‡ The main study intervention and main study control values at this time point are statistically significant from each other at the .05 level.

When asked to recall the number of times they had consumed a food in the week prior to the interview (rather than the 24 hours prior), participants in the main study intervention group reported drinking milk more times in the past week at follow-up compared to baseline, although the change was not statistically significant (**Table 42**). Participants in the main study control group reported drinking 100% fruit juice significantly more times in the past week at follow-up compared to baseline (8.3 vs 5.5, $p < 0.01$).

Table 42. Average Number of Times Child Reported Consuming a Food from a Healthy Food Group in Past 7 Days, by Intervention

Food Group, Intervention	Baseline (n)	Follow-Up (n)	Percent Change	Effect Size ^a
Milk				
Main Study: Intervention	9.88 (123)	11.13 (106)	13%	0.1
Main Study: Control	11.23 (124)	11.26 (123)	0%	<0.05
100% Fruit Juice				
Main Study: Intervention	6.85 (122)	7.15 (105)	4%	<0.05
Main Study: Control	5.49 (123)	8.29 (123)**	51%	0.3
Fruit				
Main Study: Intervention	7.94 (123)	8.08 (106)	2%	<0.05
Main Study: Control	7.79 (125)	7.75 (123)	-1%	<0.05
Green Salad				
Main Study: Intervention	1.59 (122)	1.67 (106)	5%	<0.05
Main Study: Control	1.66 (124)	1.72 (122)	4%	<0.05
Potatoes				
Main Study: Intervention	1.64 (123)	2.02 (106)	23%	0.2
Main Study: Control	1.73 (124)	2.12 (123)	23%	0.2
Vegetables (other than green salad or potatoes)				
Main Study: Intervention	5.02 (122)	5.45 (105)	9%	0.1
Main Study: Control	6.02 (121)	5.34 (122)	-11%	0.1

Source: Tables 40-45 from Survey Data Analysis (Appendix I)

- ^a An effect size of 0.2 is generally regarded as small, 0.5 as medium, and 0.8 as large. Statistical power increases with an increase in the effect size, making it more likely that statistical significance is obtained.
- * The difference between this estimate and the baseline estimate is statistically significant at the .05 level.
- ** The difference between this estimate and the baseline estimate is statistically significant at the .01 level.
- ‡ The main study intervention and main study control values at this time point are statistically significant from each other at the .05 level.

Given the small number of statistically significant changes in healthy food group consumption, we are limited in what we can conclude about improvements in consumption of health food groups associated with the campaign strategies.

▲ **Question 3: How did subgrantees implement their programs, and what changes did they make in response to ongoing monitoring and feedback?**

❖ **General Implementation Findings**

Share Our Strength developed the NKH SIF campaign based on a set of recommended strategies for how to increase participation and access to federal nutrition programs using a combination of grant support to subgrantees, and provision of technical assistance in program development and implementation. Although not considered a distinct intervention model, these campaign strategies were derived from best practices of previous NKH campaigns deemed successful in increasing participation in federal nutrition programs. Strategies included implementing effective alternative breakfast models like BAB, offering afterschool meals or snacks to the whole student body, expanding the number of sites that provide afterschool meals or snacks and summer meals, and improving overall program and meal quality in all program areas. A major emphasis of the NKH SIF approach was to support subgrantees in providing technical assistance and resources to partner organizations and schools to enable them to increase and improve access and participation in the federal nutrition programs. This support to subgrantees included both national and local level resources and training. Local support included in-person site visits with local leaders, annual planning, communications strategies, and site and community-level technical assistance. National support included NKH Partner conferences, webinars, and access to the NKH Playbook. The online NKH Playbook provided subgrantees and other organizations, including schools, public and private organizations, and state agencies, in-depth best practices on raising awareness and best practices for implementing the federal nutrition programs.

Subgrantees developed their annual plans based on NKH best practices, lessons learned and their local environment. Traditionally, fidelity—the degree to which a program is implemented as intended—refers to adhering to a specific protocol and assessing fidelity entails determining the degree to which implementers or program recipients followed the protocol (or received the recommended dose or exposure to intervention components). However, the NKH campaign is not based on a fixed model but rather on best practices for promoting community-level change and addressing local needs. After learning more about the subgrantees and their implementation activities, we determined that it was not feasible to assess fidelity by examining adherence to a core model or program. The subgrantees did not have a core set of predefined strategies; the NKH Playbook strategies served as a guide, were not prescriptive, and did not follow a specific order in which they were to be implemented because NKH campaigns are dependent on the local context. For example, one NKH Playbook strategy to increase awareness and participation entailed implementing robocalls; however, criteria for the robocalls, such as message content, frequency, and timing, were not specified or required because how the strategy is developed and takes shape relies on the local implementers and their knowledge of their communities.

The difficulties of assessing fidelity are common when evaluating community-based interventions. Evidence-based interventions in community settings often need to be adapted to fit cultural and other factors in the local setting.⁵⁹ Yet there are often questions regarding the degree to which an evidence-based program can be adapted and still have fidelity and be implemented as intended.⁶⁰ Many researchers argue that adaptation is inevitable in community-level interventions and that what is important is a better understanding of how evidence-based programs can be adapted to be effective in new settings.⁶¹ In this sense, success (or failure) of program strategies emphasize lessons from implementing in community-based settings. Lack of success may mean that a particular strategy does not work with or cannot be adapted to a specific community or in a specific setting. NKH SIF subgrantees adapted core NKH program strategies built on evidence and promising practices to their specific context. In this way, they could preserve the underlying logic of NKH campaign strategies in community settings. In this section, we contextualize the impact study findings by describing contextual factors; how subgrantees modified the strategies over the

course of their NKH SIF campaign; lessons learned; and the role of stakeholders and partners in achieving implementation and program outcomes.

Case Study Findings

Summary

All subgrantees worked closely with Share Our Strength to monitor progress, received TA to make improvements, and adapted their programs in accordance with the monitoring and TA. In terms of being adaptive, subgrantees accomplished that. However, subgrantees self-reported *implementation* success (or not) in program areas, did not necessarily align in all cases with achieved success related to their program outcomes as described in **Section 4.2 Question 1**. Using interview data and subgrantee documents, we report how subgrantees understood their success with implementation of each program area. **Table 43** provides a broad overview of which subgrantees implemented each of the three program areas successfully or unsuccessfully. All reported success with at least two of the three programs areas, and two felt they were successful with all three program areas. Afterschool meals and snacks proved the most challenging, with only three of the six subgrantees reporting successful implementation. Another subgrantee was unsuccessful implementing strategies to increase participation in school breakfast. Generally speaking, all were successful to some degree with expanding access to summer meals.

Partnerships

The NKH campaigns are public-private partnerships that work across multiple sectors and use a variety of approaches to assist in the many roles and responsibilities necessary to increase access to and participation in federal nutrition programs. A key element of the work of subgrantees for the NKH SIF campaign was to serve as a convener of a diverse group of partners and to provide technical assistance and other support that would enable these partner organizations to effectively carry out their work. Partner organizations included private, nonprofit, community-based, and governmental organizations at the state, county, and local level as well as school districts and schools. These partners were organized around implementing each of the three meal programs.

Organizations situated in the local campaign target areas—such as schools, YMCAs, Boys and Girls Clubs—most often played direct roles in the campaign by serving as sponsors and/or sites for meal programs, assisting with community outreach, and organizing activities to draw children to different programs. Other local partners provided in-kind or matching funds to increase the reach of the NKH SIF campaign in their communities. Partner and governmental organizations, other than school districts, at the regional or state level, facilitated subgrantee efforts by providing important data that subgrantees could use to promote change. They also provided technical assistance and support for administrative aspects of implementing federal meals programs. Other state organizations, such as the Association of School Superintendents and the Association of School Board members, helped raise awareness about the importance of the NKH campaign by reaching out to their constituents and creating promotional materials such as videos to promote breakfast challenges.

The diversity among partner organizations and the multiple roles these partner organizations played meant that inevitably, subgrantees sometime experienced challenges working together. These challenges included delays due to bureaucracy and administrative requirements, as well as a lack of common understanding about partner roles and responsibilities. Other common challenges included lack of buy-in of partner organizations to implement program components such as CEP or BAB or to serve children who were not a part of their regular programming. Subgrantees worked to address these challenges by engaging partners in planning and decision-making to increase buy-in and trust, and by establishing work groups and collaborative processes to improve communication and partner expectations.

Table 44 describes the different types of organizations that partnered with the subgrantees and their roles and impact in implementation and achieving program outcomes.

Table 43. Overview of Success of Implementation, by Subgrantee and Program Area

Subgrantee	Breakfast	Afterschool	Summer
<p>Florida Impact</p> <ul style="list-style-type: none"> ✗ Breakfast ✓ Afterschool ✓ Summer 	<p>Breakfast was challenging and not very successful in Florida for various reasons, including key Florida Impact staff departures, external events, and unreceptive district staff</p> <ul style="list-style-type: none"> ▪ Target areas are 4 of the largest districts in the nation and are slow to change. ▪ CEO and Field staff transition. ▪ Changing environment to include the Parkland Shooting (Broward) and hurricanes. ▪ Resistance to BAB and BIC. 	<p>Florida Impact staff felt they had good success with afterschool meals following the shift in focus away from breakfast in Year 3, when they were able to devote more staff time to afterschool meals. They have observed steady growth in the number of afterschool meals served beginning in fall 2018.</p> <ul style="list-style-type: none"> • Florida Impact used local data on food security and afterschool meals program to persuade sites to offer afterschool meals. 	<p>All Florida Impact staff interviewed agreed that summer meal program expansion in Broward County was their biggest success thanks to strong partnerships and making use of Share Our Strength Youth Ambassadors.</p> <ul style="list-style-type: none"> • Florida Impact existing partnerships with existing roles (Meals and site supervision, facilities and cleaning, and funding) helped implement summer meals campaign • De-emphasis on breakfast allowed Florida Impact to shift resources to focus on increasing summer meals program participation
<p>Hunger Task Force (HTF)</p> <ul style="list-style-type: none"> ✓ Breakfast ✓ Afterschool ✓ Summer 	<p>Successfully implemented BAB in all campaign target areas.</p> <ul style="list-style-type: none"> ▪ HTF successfully gained support of school district administrators. ▪ Partnered with Department of Public Instruction (DPI) to produce a statewide breakfast report card with local participation data; and leveraged report to convince low performing schools to implement BAB. ▪ In newer campaign target areas (Green Bay, Sheboygan, Waukesha) where there was reluctance to acknowledge poverty as an issue, HTF engaged trusted local partners and identified champions within schools to speak about the need to address hunger in the community and reframed the message as an opportunity to provide meals for all children. 	<p>Successfully increased awareness and participation in afterschool meals.</p> <ul style="list-style-type: none"> ▪ HTF had the most success in newer campaign target areas (Green Bay, Sheboygan, Waukesha), where they used a grassroots approach to build awareness and change public perceptions about afterschool meals by canvassing local communities and highlighting stories of people that are struggling. ▪ In Milwaukee, HTF was most successful increasing participation by working with individual schools to determine ways to offer programming to draw students in for afterschool meals. 	<p>Successfully expanded summer meals sites.</p> <ul style="list-style-type: none"> ▪ HTF continued to expand on its prior success of organizing a Milwaukee community partner collaborating table (district officials, summer meal sponsors, schools, community organizations) to increase the number of summer meals sites. ▪ HTF replicated the successful Milwaukee collaborating table model in Waukesha County where summer meals showed a steady expansion in sites each year.
			<i>(continues)</i>

Subgrantee	Breakfast	Afterschool	Summer
<p>Three Square</p> <ul style="list-style-type: none"> ✓ Breakfast ✓ Afterschool ✓ Summer 	<p>Successfully supported SB503 legislation in the first 2 years. Countywide participation declined in the 3rd year of the legislation due to lack of district & state agency enforcement.</p> <ul style="list-style-type: none"> ▪ SB503 required BAB adoption in all schools with 70% FRP students. 	<p>Successfully implemented afterschool meals primarily as a result of implementing and advocating for afterschool umbrella models.</p> <ul style="list-style-type: none"> ▪ Umbrella model expanded afterschool meals eligibility from only SafeKey participants to all afterschool programs. ▪ Implemented afterschool meals in high schools without an existing afterschool meals program, drawing on clubs and other afterschool activities already taking place at the high schools after the school day. 	<p>Successfully implemented and increased summer mobile sites and routes. Implemented an effective awareness campaign.</p> <ul style="list-style-type: none"> ▪ Implemented summer meals mobile routes and added an afternoon mobile route. ▪ Canvassed apartment complexes and posted flyers at or near mobile route sites to raise awareness through face-to-face community engagement and strategies to increase spreading awareness through “word of mouth” in the community. ▪ Implemented morning and afternoon mobile meal routes.
<p>Texas Hunger Initiative</p> <ul style="list-style-type: none"> ✓ Breakfast ✗ Afterschool ✓ Summer 	<p>Successful with elementary schools BAB adoption, expanded to high schools</p> <ul style="list-style-type: none"> ▪ Implemented BAB in elementary and middle schools, specifically Breakfast in the Classroom (BIC) in elementary schools and Grab and Go in middle schools. ▪ Began advocating for Second Chance Breakfast in high schools. ▪ When met with resistance to BAB, they focused on increasing participation in conventional breakfast. 	<p>Mixed success, increasing afterschool sites and increasing participation.</p> <ul style="list-style-type: none"> ▪ Two of the three SIF regions successfully increased afterschool meals served, some of which implemented an umbrella model. ▪ One campaign target area was not successful increasing afterschool meals served due to lack of sponsors in the region and the ISD’s disinterest, even with technical assistance (TA) provided to facilitate the application process. ▪ Afterschool program expansion did become a lower priority as Texas Hunger Initiative shifted NKH SIF campaign focus and resources toward school breakfast. 	<p>Successfully increased meal quality and summer meals access.</p> <ul style="list-style-type: none"> ▪ Convened a Summer Sponsor Council in one region and implemented <i>Excellence in Summer Meals</i>, a voluntary program for sponsors consisting of an evaluation and ranking system to provide sites with information on sponsor quality. ▪ Everyone within the campaign target areas is always within a mile of a summer meals site and can find the location via text message.

(continues)

Subgrantee	Breakfast	Afterschool	Summer
<p>United Way of King County</p> <p>✓ Breakfast ✗ Afterschool ✓ Summer</p>	<p>Successfully expanded BAB</p> <ul style="list-style-type: none"> Implemented BAB models in more than 20 schools across King County. Worked with trusted partner organizations and district nutrition directors to gain entrée into individual schools, UWKC. Deployed AmeriCorps members in targeted schools to support BAB implementation. 	<p>Mixed success, increasing afterschool sites and increasing participation.</p> <ul style="list-style-type: none"> Starting new sites on a site-by-site basis was successful, but UWKC continues to work on establishing a more systematic approach to implementing afterschool meals. 	<p>Successfully expanded summer meals.</p> <ul style="list-style-type: none"> United Way of King County successfully implemented a coordinated marketing campaign and reframed messages and language about summer meals to better engage diverse racial and ethnic populations. The summer meals program successfully expanded through the deployment of AmeriCorps VISTA Summer Associates and a significant outreach campaign; it is uncertain whether the current levels of funding and staffing power for these are sustainable.
<p>United Way for Southeastern Michigan</p> <p>✓ Breakfast ✗ Afterschool ✓ Summer</p>	<p>Mixed success in increasing breakfast participation.</p> <ul style="list-style-type: none"> BAB efforts were slow to start in some areas as they refined the qualities needed in a Breakfast Coach Refined the breakfast coach qualities and later hired coaches that increased BAB adoption. 	<p>UWSEM did not focus efforts on the afterschool meals program, except for expanding the mobile app developed for summer meals to afterschool meals.</p>	<p>Successfully increased summer meals participation by raising awareness, providing enrichment activities to increase participation at individual sites, and creating an app for sponsors and sites to help streamline and ease the meal counts requirement.</p> <ul style="list-style-type: none"> Completed mobile app and training resources to ensure compliant summer meals counts. The app reduced the paperwork burden making it easier for new sites to participate in the program. Implemented comprehensive 'Meet Up & Eat Up' marketing campaign to raise awareness and increase participation. Young adults (Play teams, provided by Play Works) were deployed to summer sites that did not have enrichment activities and held pop-up summer camp activities.

- ✓ Successful Implementation
- ✗ Unsuccessful Implementation

Table 44. Subgrantees’ Partner Type, Role, and Impact in Program Implementation and Outcomes

Partner Type	Role	Impact on Implementation and Achieving Program Outcomes
Federal government agencies ^a	<ul style="list-style-type: none"> ▪ Administered the federal nutrition programs (SBP, NSLP, CACFP, SFSP, and SSO) at the federal level ▪ Provided technical assistance on how to optimize and comply with federal nutrition programs 	<ul style="list-style-type: none"> ▪ Enabled subgrantees to implement all programs in compliance with regulations ▪ Ensured that partner organizations could overcome administrative challenges and effectively serve as sponsors and sites
State agencies ^b	<ul style="list-style-type: none"> ▪ Administered the federal nutrition programs (SBP, NSLP, CACFP, SFSP, and SSO) at the state level ▪ Helped expand CEP/Provision 2 enrollment ▪ Provided administrative data ▪ Provided state funding for BAB legislation (Nevada) ▪ Promoted breakfast statewide using school report cards and school breakfast challenges 	<ul style="list-style-type: none"> ▪ Enabled subgrantees to educate stakeholders on current program participation using administrative data from a reputable source ▪ Raised awareness about underperforming schools to increase breakfast participation ▪ Improved paperwork compliance for afterschool and summer meals
State and local associations ^c	<ul style="list-style-type: none"> ▪ Provided funding to subgrantees (e.g., for a breakfast coach) and equipment to schools and meal sites ▪ Disseminated messages through association membership 	<ul style="list-style-type: none"> ▪ Increased awareness and support for BAB models
City/County government agencies ^d	<ul style="list-style-type: none"> ▪ Provided meal sites and sponsored afterschool and summer meals 	<ul style="list-style-type: none"> ▪ Expanded the number of sites hosting afterschool and summer meals
School Districts, District food service departments	<ul style="list-style-type: none"> ▪ Operated school lunch, school breakfast, afterschool meals and snacks and summer meals programs within the district, schools and community. ▪ Transitioned meal service delivery and models to reach more kids, including BAB, afterschool meals umbrella model, mobile meals, etc. ▪ Developed marketing materials for school stakeholders to raise awareness and increase program participation. 	<ul style="list-style-type: none"> ▪ Increased program participation through adopting alternative breakfast models, increasing afterschool meals and snacks, and summer meals sites and meals.
Food service organizations ^e	<ul style="list-style-type: none"> ▪ Operated school meal programs ▪ Determined resource needs for meal distribution in schools with limited storage space ▪ Provided shelf-stable food for sites with limited storage or refrigeration, such as libraries ▪ Expanded access to culturally relevant food for afterschool meals or snacks 	<ul style="list-style-type: none"> ▪ Increased participation in meal programs by making programs more accessible and appropriate for sites

(continues)

Partner Type	Role	Impact on Implementation and Achieving Program Outcomes
Local nonprofit organizations ^f	<ul style="list-style-type: none"> ▪ Served as sites and sponsors for afterschool meals and snacks and summer meals ▪ Provided on-site activities at meal sites ▪ Provided afterschool and summer meals program application technical assistance to other local organizations that wanted to provide meals through these programs ▪ Hosted meetings on behalf of subgrantees to engage stakeholders ▪ Provided in-kind and monetary support ▪ Vended meals for afterschool meals and snacks and summer meals ▪ Provided nutrition education ▪ Hosted afterschool and summer meals sites and sponsored meal programs ▪ Cultivated relationships with community to sustain childhood programs ▪ Shared data and personal stories to build awareness about community need ▪ Conducted outreach in schools 	<ul style="list-style-type: none"> ▪ Increased the number of sites offering afterschool meals and snacks and summer meals, increasing program participation ▪ Created financial stability and sustainability and widened the circle of engaged partners ▪ Motivated kids through activities to stay at meal sites ▪ Expanded the number of sites hosting afterschool and summer meals ▪ Changed community perceptions about the problem of childhood hunger, resulting in an increase in the number of programs serving children in those areas
Other ^h	<ul style="list-style-type: none"> ▪ Served as summer mobile meals sites in areas with high food insecurity 	<ul style="list-style-type: none"> ▪ Expanded mobile meals routes to bring summer meals directly to more children

^a U.S. Department of Agriculture and its regional offices

^b Department of Public Instruction/Education, Department of Agriculture, Department of State Health Services, State Office of Superintendents, Office of Food Security

^c Parent Teacher Associations, School Principal associations, School Board Associations, Nutrition Directors Associations, United Dairy Industry

^d Parks and Recreation, local libraries, agriculture extension, Juvenile Justice, Housing Authorities

^e Sodexo, Inc., Milwaukee Center for Independence, Food Lifeline

^f Boys and Girls Clubs, YMCA, United Way, community centers, behavioral health centers, local food banks

^g Parent Teacher Associations, School Boards, Nutrition Directors Associations

^h Apartment complexes, local nutrition coalitions

Changes Over Time

In the second and third years (2016-2017 and 2017-2018 school years) of the NKH SIF campaign, subgrantees made changes to implementation based on their ongoing learnings. These included changing program priorities, expanding NKH SIF campaign target areas, evolving strategies, and changing partner relationships to increase effective collaboration.

- **Evolving program priorities (school breakfast, afterschool meals and snacks, summer meals):** After limited progress in the first year (2015-2016 school year), some subgrantees shifted focus and resources from one program area to another, generally after consultation with Share Our Strength. Shifting focus from one program in which subgrantees were not having success to another program area where stakeholders and partners were better able or more amenable to implementing campaign strategies enabled subgrantees to maximize success. Not surprisingly, once focus was shifted, subgrantees generally did not return to the original focus later, as it had been typically less successful. One subgrantee de-emphasized school breakfast as a program focus area in year 4 of their NKH SIF campaign (2018-2019 school year) because of lack of progress expanding BAB implementation in the three target districts. Instead, the subgrantee refocused their efforts on afterschool meals and snacks and summer meals programs. As a result, staff worked more on coordinating enrichment activities and training, as well as communicating with afterschool and summer meals partners.
- **Expanding program coverage:** Some subgrantees ramped up successful programs to cover additional populations or offer extra meals.
 - **School Breakfast—Expanding target population:** By expanding to additional student populations within the campaign target areas, subgrantees used successful strategies to increase program participation. For example, after successfully implementing BAB in elementary and middle schools, one subgrantee began outreach to high schools in the district and implemented Second Chance breakfast, a breakfast model most effective in high schools because high school student participation in breakfast is highest, when the meal is offered later, between first and second period.
 - **School Breakfast—Expanding campaign target areas:** Another subgrantee, after statewide legislation passed in 2018 requiring high-need schools to serve breakfast after the bell in Year 4 expanded their campaign target area from a single county to the entire state. The subgrantee shifted financial, staff and contractor resources to support the statewide expansion to include partnering with the state agency, school district leaders and FNS and other organizations leading into implementation in the 2019-2020 school year.
 - **Summer Meals—Expanding number of meals available:** Subgrantees worked to add additional meal sites or mobile meal routes to increase the number of meals available to children. Another subgrantee who successfully implemented three morning summer meals mobile routes in 2016 and 2017, added an afternoon summer meals mobile route in 2018, increasing participation among older children.
- **Shifting strategy:** As a result of implementation challenges, receiving technical assistance, or gathering feedback from partners, subgrantees shifted how they implemented campaign strategies.
 - **School Breakfast:** With minimal progress convincing schools to adopt BAB, one subgrantee focused efforts on increasing participation in existing (before the bell) school breakfast programs when schools were not willing (or lacked the authority) to implement BAB.
 - **Afterschool Meals and Snacks:** In the 2016-2017 school year, after receiving technical assistance from Share Our Strength, two subgrantees convinced schools to implement an umbrella model to increase afterschool meals participation by providing

afterschool meals to anyone attending the afterschool enrichment program, other nearby programs (e.g., sports, band, tutoring, clubs), and siblings.

- **Summer Meals:** Instead of increasing the number of summer meals sites, another subgrantee shifted strategies to increase participation at existing sites. Facing low participation at summer meals sites, the subgrantee decided against expanding the number of sites to increase participation and focused instead on maximizing participation at existing sites. This approach increased both participation and the financial stability and sustainability of existing summer meals sites.
- **Changing partner relationships to increase effective collaboration:** Subgrantees expanded or created new partnerships, providing subgrantees resources and leverage to increase schools implementing BAB. Expanding involvement from existing state and local partners increased subgrantees' ability to engage decision makers, promote financial stability, and expand the geographic campaign target areas, which further facilitated BAB implementation. For example:
 - In the 2016-2017 school year, one subgrantee secured matching funding from existing partners. With funding from multiple sources, the subgrantee increased financial stability, program sustainability, and widened the circle of engaged individuals and organizations. The resulting diversification of their funding portfolio promoted sustainability, staff retention, financial balance, continuing partnerships, and ensured broader brand recognition for their work on childhood hunger with agencies funding complementary initiatives.
 - Another subgrantee, after expanding the campaign target area from an urban county to statewide in Year 4, partnered with statewide organizations. These partners were more familiar to schools and districts across the state, enabling the subgrantee to gain access to schools and school districts across the state who were unfamiliar with the subgrantee.

Contextual Factors

A variety of contextual factors impacted implementation for some subgrantees.

- **Weather:** Wildfire smoke in Seattle (summers of 2017 and 2018) had an impact on summer meals participation as many people stayed indoors and therefore missed opportunities to receive meals. In Southeast Texas, Hurricane Harvey (August 2017) forced many schools to temporarily or permanently close affecting program participation. In Florida, damage caused by Hurricane Maria in Puerto Rico (September 2017) forced many families to relocate to Florida adding strain on school systems to address unexpected disaster response. Still, the 2017 hurricane season resulted in increased meal participation in both Florida and Texas.
- **Statewide Legislative changes:** Statewide legislation that requires BAB in high-need schools was passed in two subgrantee states, Nevada and Washington, and this influenced these subgrantee's campaign activities. The Nevada law was passed in June 2015 at the start of Three Square's NKH SIF campaign. Breakfast participation increased in the following two school years (2015-2016 and 2016-2017) with support from the subgrantee who provided technical assistance and marketing. Some of the early participation increases were not sustained in 2017-2018 due to lack of enforcement and some schools stopped making an effort to increase participation. The Washington law was passed in March 2018, in the third year of United Way of King County's NKH SIF Campaign. In Year 4, the subgrantee shifted efforts to statewide to raise awareness of the new requirement and to support schools via technical assistance and funding leading into 2019-2020 school year when the legislation goes into effect.
- **Rural Communities:** Two subgrantees working in rural communities noted the rural landscape influenced participation in afterschool and summer meals. One subgrantee noted that a lack of public or limited school transportation made it difficult to get kids to sites. They overcame this barrier in one instance by combining afterschool programs at one school

location for two rural schools and sharing a school bus to bring children back and forth. The other subgrantee had difficulty finding organizations to sponsor afterschool meals in a small rural community. They arranged for sponsors from Houston to serve the community.

Lessons Learned

Subgrantee lessons learned reflect subgrantees' efforts to engage schools, leverage partnerships, tailor campaign strategies, identify effective staff characteristics, raise subgrantees' public profile, and increase campaign activities awareness. These lessons learned emerged from the baseline and follow-up case study reports.

- **Strategic planning and identifying champions facilitate implementation of BAB and afterschool meals and snacks.** District- and school-level champions can help drive implementation efforts and build support among other school staff; they can also ensure that subgrantees understand schools' unique needs and that stakeholders take part in the planning and decision-making process. Identifying champions at the district level also promotes buy-in of leaders at the school level. To promote buy-in among school leadership, subgrantees needed to engage staff at varying levels (including school board members, principals, and food service providers) early and often throughout implementation, encouraging teamwork and cohesion between schools and subgrantee, helping ensure program success. Partners also provided technical assistance and support to schools, reducing the burden on schools implementing BAB and afterschool meals and snacks. Identifying reliable afterschool program partners helped one subgrantee ensure afterschool meals and snacks were coupled with afterschool enrichment programming.
- **Tailoring technical assistance to the needs of specific schools maximizes the impact and fosters the partnership between the subgrantee and school.** Ensuring that schools have the appropriate support and resources needed for campaign implementation requires planning and tailoring technical assistance to school and school district needs. Most schools that implemented BAB needed guidance on identifying the right breakfast model for their circumstances. Some schools lacked experience with federally funded nutrition programs or did not understand the requirements to implement them (this was particularly true of charter schools). Some schools did not have enough food and nutrition staff to implement BAB. Others needed help from the subgrantees to address equipment shortages before implementation, such as the need for new refrigeration or carts for distributing food. These different needs and gaps in knowledge call for different types of technical assistance. Thus, understanding what these needs were in each school was necessary to offer effective technical assistance and implement food programs successfully.
- **Effective campaign staff must be able to build strong positive relationships with local school districts to facilitate cooperation.** Effective campaign staff were often experienced in building community coalitions, building relationships at various levels within communities, working with schools, and working in public affairs. These campaign staff also had the right temperament, understanding of the challenges, and a respect for the organizational culture of local school districts, all of which facilitated successful relationships between the subgrantees and schools. Successful campaign staff also understood school nutrition programs and how schools operate. For example, campaign staff with prior school food service experience were better able to foster the necessary relationships for successful implementation. Subgrantees also found that relationship-building skills, community knowledge, and a positive temperament were more important determinants of an effective campaign staffer than experience with federal nutrition programs. Staff with these skills created coalitions with summer meals sponsors to improve summer meals quality; joined and led school health advisory councils that provided school districts with nutrition guidance; and partnered with school districts to convince other school districts to implement BAB.
- **Being known in the community as an organization addressing childhood hunger can increase campaign awareness and effectiveness.** Subgrantees with name recognition specifically tied to their efforts to address hunger had more success engaging

key community stakeholders through existing relationships, creating partnerships, and increasing public awareness of NKH SIF campaign efforts. These subgrantees had solid footing for a focused community approach and eased challenges of engaging new partners, including schools, for campaign implementation. For example, to expand their NKH SIF campaign's reach and facilitate implementation, one subgrantee hired a public relations firm to increase public awareness of their NKH SIF campaign efforts and the impact nutrition programs have on reducing childhood hunger.

- **Community-based campaign efforts to spread awareness through “word of mouth” can be an effective strategy to increase participation in summer meals programs.** “Word of mouth” is a community-based, face-to-face recruitment approach to building trust and encouraging participation within a target population. In the context of the NKH SIF campaign, it involves canvassing communities, knocking on doors, leaving door hangers, and posting or handing out flyers advertising summer meals within the campaign target areas. In addition, ensuring summer meals programs offer a positive experience (for example, implementing enrichment activities at summer meals sites) can also increase awareness through word of mouth. Although resource intensive, word of mouth has been shown to be an effective strategy to recruit hard-to-reach populations.⁶² For example, one subgrantee reported that canvassing neighborhoods and apartment complexes was the most effective strategy to raise summer meals program awareness.

Activity Tracker Findings

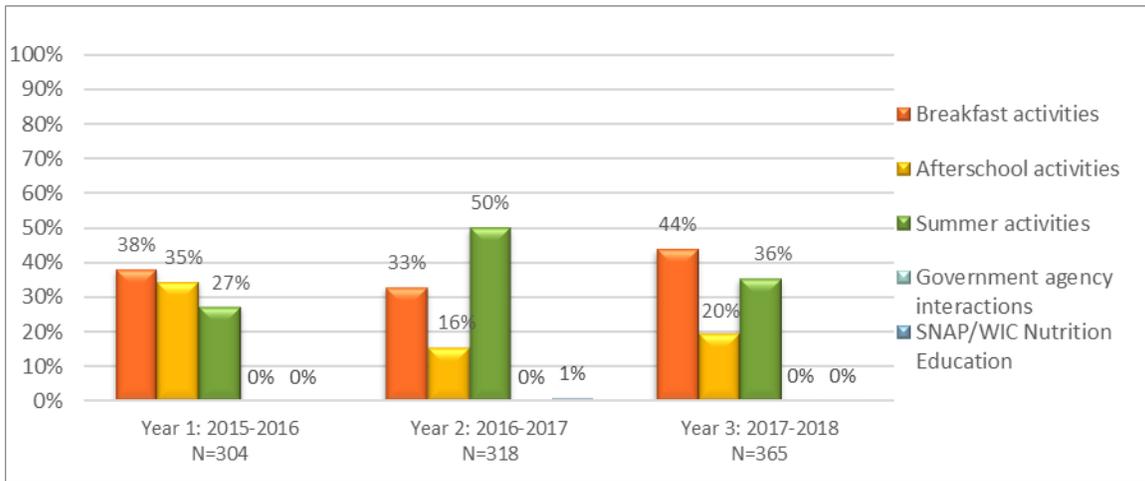
To document NKH SIF partner activities, Share Our Strength and RTI developed an activity tracker template in Microsoft Excel. NKH SIF partners used these activity tracker templates to record meaningful activities aimed at increasing participation in school breakfast, afterschool meals and snacks, and summer meals programs as per NKH strategies. NKH SIF partners also used the activity tracker templates to record meaningful activities related to SNAP, WIC, or nutrition education programs or interactions with government agencies. However, because each subgrantee interpreted and coded activities somewhat differently, despite the activity tracker codebook shown in **Section 3.2** (Table 6), it is not particularly meaningful to compare the results across subgrantees, particularly in terms of absolute numbers of activities. Thus, this section is organized by subgrantee and focuses on the main program areas, not specific types of activities within those program areas.

Florida Impact

For Florida Impact, breakfast activities were the most commonly recorded type of activity in the 2015-2016 and 2017-2018 school years, while summer activities were the most common type of activity in the 2016-2017 school year (**Figure 2**). However, afterschool activities were almost as common in the 2015-2016 school year as breakfast. They reported fewer afterschool activities after the 2015-2016 school year, which is not consistent with the follow-up case study findings, in which they reported that they had de-emphasized breakfast in the 2018-2019 school year and focused more on afterschool. Florida Impact did report that their greatest success was summer meals in Broward County, which is consistent with the shift in activities to summer being the most common in the 2016-2017 school year.

Additional details on Florida Impact’s activity tracker data are provided in the summary activity tracker report in **Appendix F-1**.

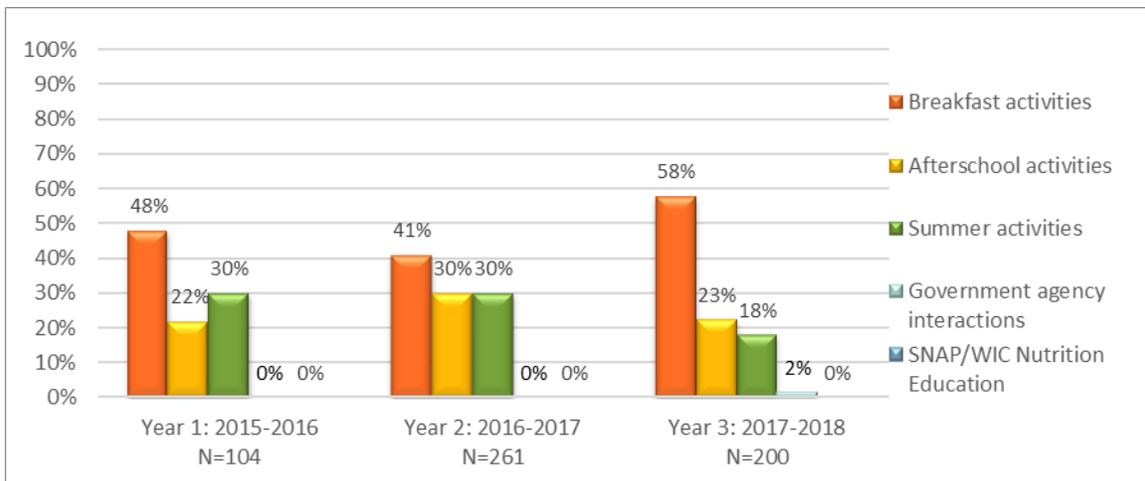
Figure 2. Comparison of Florida Impact Program Area Activities, by Year



Hunger Task Force (Wisconsin)

For Hunger Task Force, breakfast activities were the most commonly recorded type of activity in all years (**Figure 3**). They reported success in all program areas in the follow-up case study report, and their activity tracker data are consistent with that. Additional details on Hunger Task Force’s activity tracker data are provided in the summary activity tracker report in **Appendix F-2**.

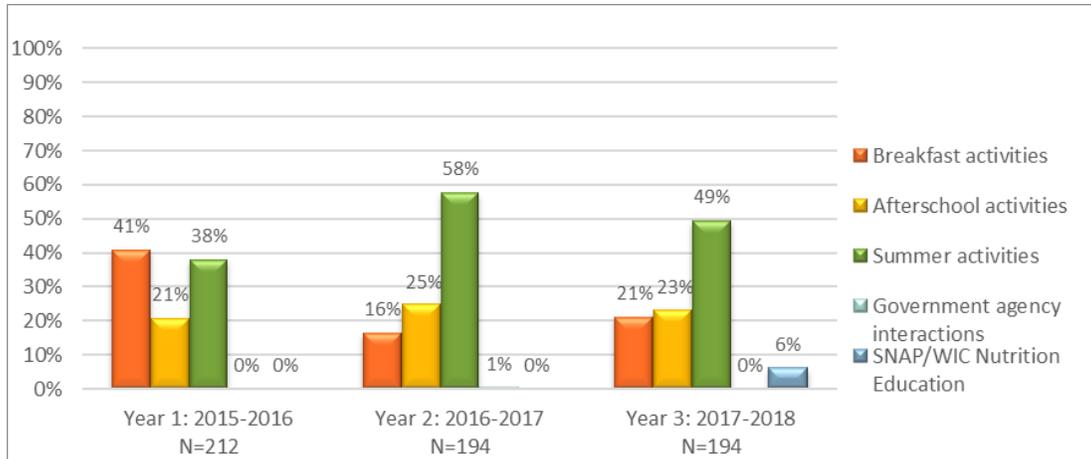
Figure 3. Comparison of Hunger Task Force Program Area Activities, by Year



Texas Hunger Initiative

For Texas Hunger Initiative, breakfast activities were the most commonly recorded type of activity in all years once the summer quarter of data recorded in 2015 is accounted for (**Figure 4**). They reported success with summer meals in the follow-up case study report, and their activity tracker data are consistent with that. Afterschool activities account for a smaller proportion of activities in all years, which is also consistent with their report in the follow-up case study report that they were not successful with afterschool meals and snacks because afterschool meals was not a program priority for Texas Hunger Initiative. Additional details on Texas Hunger Initiative’s activity tracker data are provided in the summary activity tracker report in **Appendix F-3**.

Figure 4. Comparison of Texas Hunger Initiative Program Area Activities, by Year

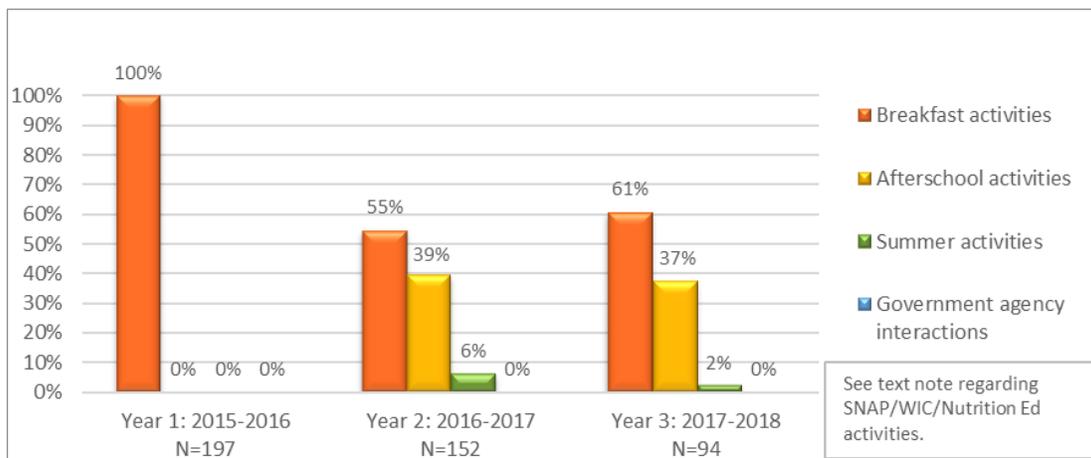


Three Square (Nevada)

Note: Three Square is a unique NKH SIF partner because their role as an afterschool and summer meals sponsor requires them to conduct monitoring visits to afterschool and summer meal sites. These monitoring activities dominated all other afterschool and summer activities in all years. For consistency with the other NKH SIF partners, the monitoring activities are excluded here. In addition, SNAP/WIC/Nutrition Education accounted for 63% of Three Square’s activities in Year 3, a significant increase from Year 2, but as that change does not reflect a change in priorities, those data are omitted from Figure 5 so as not to misrepresent the change as such.

For Three Square, breakfast activities were the most commonly recorded type of activity in all years (**Figure 5**). They reported success with breakfast in the follow-up case study report, and their activity tracker data are consistent with that. They engaged in few summer activities in all years, other than monitoring activities (which are not shown). Additional details on Three Square’s activity tracker data are provided in the summary activity tracker report in **Appendix F-4**.

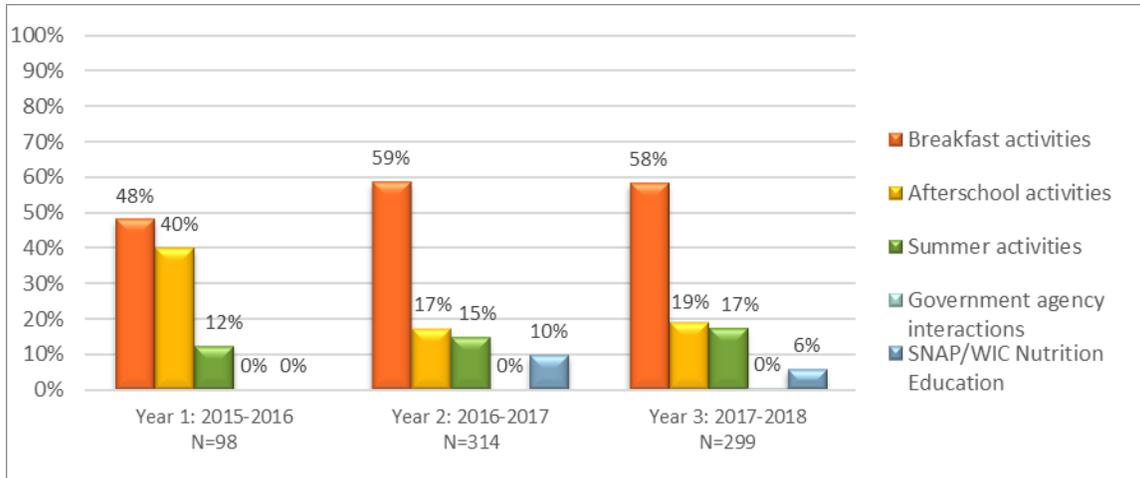
Figure 5. Comparison of Three Square Program Area Activities, by Year



United Way of King County (Washington)

For United Way of King County, breakfast activities were the most commonly recorded type of activity in all years (**Figure 6**). They reported success with school breakfast in the follow-up case study report, and their activity tracker data are consistent with that. Afterschool activities decreased in the 2016-2017 school year and remained lower in the 2017-2018 school year. This also is consistent with their report in the follow-up case study report that they were not successful with afterschool meals and snacks because they were less focused on this program than breakfast and summer. Additional details on United Way of King County’s activity tracker data are provided in the summary activity tracker report in **Appendix F-5**.

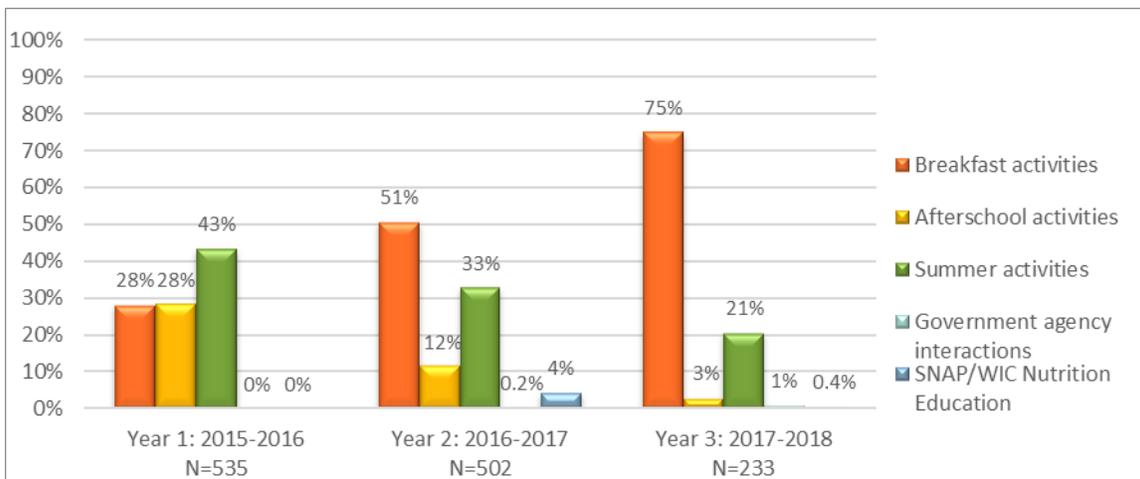
Figure 6. Comparison of United Way of King County Program Area Activities, by Year



United Way for Southeastern Michigan

For United Way for Southeastern Michigan, summer activities were the most commonly recorded type of activity in the 2015-2016 school year, while breakfast activities were the most common type of activity in the 2016-2017 and 2017-2018 school years (**Figure 7**). This is consistent with their report in the follow-up case study report that they had success with breakfast and summer program areas, but not afterschool, which they did not focus on (and that lack of focus is reflected in the activity tracker data, especially in the 2016-2017 and 2017-2018 school years). Additional details on United Way for Southeastern Michigan’s activity tracker data are provided in the summary activity tracker report in **Appendix F-6**.

Figure 7. Comparison of United Way for Southeastern Michigan Program Area Activities, by Year



5. CONCLUSIONS

Childhood hunger and food insecurity remain substantial and seemingly intractable problems in the United States. Children with insufficient food intake are more likely to consume inadequate nutrients for optimal health and development. Participation in federal nutrition programs reduces food insecurity and increases nutrient intake. Share Our Strength's NKH campaigns work to childhood hunger and food insecurity by increasing children's access to and participation in the federal nutrition programs. CNCS awarded Share Our Strength a multi-year SIF grant to expand their NKH campaigns to communities across the country that were "poised to create impact in the fight to end childhood hunger" and to assess the impact of these campaigns on child hunger.

Using a comprehensive mixed-methods approach, RTI independently evaluated the SIF-funded NKH campaigns implemented by six community-based subgrantees. The impact evaluation consisted of main and ancillary studies and analysis of administrative data. RTI designed the main study evaluation to test for moderate evidence of an impact of the campaign activities on reduction in child hunger. To this end the main study employed a quasi-experimental design that involved baseline and follow-up data collection in independent random samples of students from three NKH intervention schools and three comparison schools. A complementary ancillary study looked at pre-post changes in students randomly selected at baseline in one intervention school from each of three subgrantee sites. The implementation evaluation included subgrantee case studies and tracking of subgrantees' activities (i.e., activity trackers). RTI used the baseline and late implementation case studies to examine the implementation of NKH SIF campaigns and the circumstances in which they unfolded and assessed quarterly activity tracker data to determine subgrantee usage of campaign strategy types.

5.1 Summary of Findings

▲ Implementation Evaluation Findings

RTI found that Share Our Strength's subgrantees developed their implementation plans using best practices from previous NKH campaigns, and then adapted the NKH evidence-based and promising practices. In this way, they preserved the underlying logic of NKH strategies while contextualizing them for their respective community settings. Community-based researchers argue that adaptation is inevitable in community-level interventions and thus it is important for practitioners working in this field to better understand how to effectively adapt evidence-based practices in new settings.^{61,63,64} RTI recognized that evidence-based interventions in community settings often need to be adapted to fit cultural and site-based factors.⁵⁹ Yet, there are questions regarding the degree to which an evidence-based program can be adapted while maintaining fidelity to the intervention's established effective practices during its implementation.^{60,65} In this sense, success (or failure) of achieving program strategies emphasizes identifying lessons from implementing in community-based settings. Lack of success may mean that a particular strategy does not work with or cannot be adapted to a specific community or in a specific setting.

All NKH subgrantees reported success with implementing at least two of the three program areas, and two reported they were successful with all three. Afterschool meals and snacks proved the most challenging, with only three of the six subgrantees reporting successful implementation. Another subgrantee was unsuccessful implementing school breakfast. All were successful to some degree with summer meals. Not surprisingly, then, among the intervention schools, similar implementation patterns occurred. For example, four of the six schools implemented BAB or other alternative breakfast model, and two worked to increase participation in breakfast served in the cafeteria. None of the six intervention schools successfully implemented afterschool meals and snacks.

▲ Impact Evaluation Findings

We conclude that the NKH SIF campaign implementation in schools led to an overall decrease in the number of missed meals for participants and specifically increased participation in the school breakfast program. In reviewing results from the survey data, we found that following the intervention, children consumed breakfast on more days. Further, children eating breakfast only at school were more likely to consume a nutritionally sufficient breakfast. These breakfast results are mostly consistent with other research finding the availability of free school breakfast significantly increases school breakfast participation and reduces the risk of skipping breakfast,^{56,66} though results from other studies are varied regarding breakfast skipping.^{66,67} Other analyses have also shown the school breakfast program to increase breakfast consumption when breakfast is defined to be more nutritionally substantive than just consuming any food or beverage, particularly for low-income students.⁶⁸ Similar conclusions could not be reached from our results for the afterschool and summer meals programs, as we saw mixed results across the two programs and across the states. Using administrative data, we evaluated the campaign's effects in a broader context than the main study intervention schools. These results revealed that for both afterschool meals and snacks and summer meals, NKH SIF campaign target areas in two states experienced increases in participation that were also greater than those seen in the rest of each state, whereas participation rates in NKH SIF campaign target areas declined in three states while participation in the rest of each state increased. One state for each program experienced increases in participation rates but to a lesser degree than the rest of the state. NKH SIF campaign target areas in states were inconsistent in their participation rate trends for the two programs; Nevada is the only state that saw an increase in both. The available literature emphasizes the low reach of the afterschool and snacks⁶⁹ and summer meals programs.⁷⁰⁻⁷² One recent review also found a dearth of evidence on the impact of summer meal programs on students' dietary intake.⁷³

Socio-demographic characteristics correlated with increased breakfast consumption at school included 1) fewer adults in the household; 2) a larger number of children under 18 in the household; and 3) a student identifying as non-Hispanic or African American. These results are consistent with another study of breakfast participation that showed lower education and having more children in the household were significant predictors of breakfast participation.⁵⁶

Further, our results suggest that the NKH SIF campaign implementation protected participants from increases in food insecurity and improved their overall dietary quality at breakfast. Participants in control schools (where the NKH SIF campaign was not implemented) experienced an increase in food insecurity over the course of the study, while those in intervention schools (both Main and Ancillary Studies) did not. These findings aligned with other research examining the effectiveness of the school breakfast program, and reduction in food insecurity.⁷⁴⁻⁷⁶ Research also suggests that access to school breakfast programs helps to maintain food security for low income households with elementary-aged children⁷⁴ and low income and time constrained students when breakfast is served in the classroom or more time is made available for breakfast in school.⁵⁶ Further, research found the school breakfast program helped reduce the risk of marginal food insecurity and mitigated food-related concerns – such as worrying whether food will run out before there is money to buy more and not being able to afford balanced meals – among low-income families at-risk for food insecurity.⁷⁴

Finally, our results showed study participants were eating healthier foods overall (as indicated by improvements in consuming a nutritionally sufficient breakfast and Healthy Eating Index scores) at follow-up compared to baseline results and compared with control participants. Other studies also demonstrated improvements in the nutritional quality of breakfast specifically⁶⁶ consumed at school or overall diets^{67,77} among children who have access to or participate in school meal programs. One study found that children with access to the school breakfast program consumed less fat; were less likely to have low levels of vitamin C, vitamin E; and folate and were more likely to meet recommended amounts for fiber, potassium, and iron intake.⁶⁷ Another more recent study found that the school breakfast program increased access for improved nutrient intake especially through whole grain ready to eat cereals.⁷⁸

5.2 Limitations

Our evaluation was comprehensive. We integrated a qualitative implementation evaluation with a quantitative impact study. The impact evaluation was designed to show moderate evidence through its employment of a quasi-experimental design to compare control and intervention groups. Further, the impact evaluation's questionnaire was interview-administered and there were few missing values. However, as with all studies, we acknowledge limitations with this evaluation.

The quasi-experimental design, as implemented for the main study would not allow us to make definitive conclusions about causality. The matching of NKH SIF campaign schools to control schools on geographic and demographic characteristics in the main study was used to minimize the possibility that any factors other than the NKH SIF campaigns could be viewed as causing observed changes in child hunger. Unfortunately, for several practical reasons we were often unable to find ideal matches. The pool of available schools in a given state is limited. Matching on the school's total enrollment, geographic location, minority composition, and proportion receiving free and reduced lunch and the population density and median household income of the city in which it is located, proved to be a challenge. Furthermore, though we extensively recruited the best matches, in some cases, the originally selected intervention and/or control schools had to be replaced because of nonresponse, withdrawal from the program, or unwillingness to participate in the evaluation. The uneven implementation of the program, including commencement timing of the intervention, and the imperfect matching of the schools resulted in lowered internal validity.

Although our priority for achieving moderate evidence was to ensure a high degree of internal validity, with the ancillary study, we sought to enhance external validity or generalizability by following a cohort of students in NKH SIF campaign intervention schools in three separate sites. Ultimately, though, despite our retention efforts (i.e. thank you gifts and repeated contacts), necessarily balanced against the families' wishes regarding ongoing participation, we retained only a small number of the cohort sample.

Further, the Main and Ancillary studies relied on survey data. As with any survey, data is subject to reporting bias. Below, we note additional limitations associated with commonly used measures on the questionnaires: 1.) 24-hour dietary recalls; Food frequency questionnaires; and 3.) U.S. standard food security measure.

A 24-hour dietary recall is a structured interview intended to capture detailed information about all foods and beverages consumed by the respondent in the past 24 hours. The 24-hour diet recall relies on a trained interviewer, an accurate memory of intake, an ability to estimate portion size, and the interviewee's reliability to not misreport. This method has a low burden for respondents. For the age of our population, child-parent reporting offers the most accurate reporting.⁷⁹⁻⁸¹ Common limitations cited for the 24-hour diet recall include its inability to account for day-to-day variation with a single administration; variation in reporting based on an interviewer's administration; bias in participant reporting of perceived good or bad foods; poor estimation of portion sizes; and its weakness in measuring intake of foods or drinks with a high day-to-day variability. We proactively worked to minimize these limitations. To minimize reporting bias and consistently collect estimates of foods, we collaborated with the University of Minnesota Nutrition Coordinating Center to intensely train and certify our interviewers. We used food estimation guides to collect standard portions. To jog memory of participants, interviewers worked chronologically and, if needed, were trained to ask participants to recall activities during the previous day or ask other probing questions to make sure the participants remembered as much as possible. Because a single administration of a 24-hour recall is unable to account for day-to-day variation and provide information about habitually consumed food and drinks, we also administered a food frequency questionnaire. A food frequency questionnaire (FFQ) consists of a finite list of foods and beverages with response categories to indicate usual frequency of consumption over the time period queried, in our case 7 days. FFQs have known systematic error, consistent departure from a true value in the same direction, vs. random error existing in 24-hour recalls. An additional limitation of FFQs is that they require participants to perform cognitively complex memory and averaging tasks to estimate quantities consumed over a period of time. For children, the reporting task for both the

24-hour recall and FFQ can be especially challenging. Including parents in the reporting process improves recollection.⁷⁹⁻⁸¹

The U.S. standard food security measure is intended to assess household-level economic and social conditions associated with restricted food access and not the individual-level physiological condition of hunger. This measure reflects the household's situation over a period of time; our survey used 30 days. Thus, while a household may in fact be food secure at the time of the interview, if that household experienced food insecurity at some time during the past 30 days it will be considered food insecure. Additionally, this tool is intended to assess household-level economic and social conditions associated with restricted food access and not the individual-level physiological condition of hunger.

Lastly, while our impact evaluation findings resulted from primary data collection efforts, we also relied on administrative program participation data obtained from the state and schools to offer a broader perspective on the campaign work. The administrative data proved useful for setting a context (e.g., total enrollment in various programs across the state) but did not have the requisite accuracy and depth of information that would have helped us augment the survey data.

The in-depth implementation case study interviews provided rich information about the subgrantees' implementation experiences, but as with any study, resource constraints generated some limitations. We conducted baseline and late-implementation site visits and interviewed up to 15 respondents at baseline and 7 at the late-implementation visit. The small number of respondents, particularly for the late-implementation visits, meant that we sometimes obtained only one perspective on a subgrantee's program area, which limited triangulation of perspectives. In fact, in several instances, interviewees' perspectives were contradictory, and we had no additional means to resolve the contradiction. Further, because of the semi-structured nature of the interviews, respondents provided answers that were salient at the time of the interview and based on their experience and recall. Consequently, we cannot easily quantify interview responses to assess whether something was universally a theme. For example, some subgrantees or their partners may have experienced a specific implementation challenge or barrier but did not report it during the interview because we did not ask specifically about it, or the participant did not recall it at the time of the interview. In the activity tracker reporting, we noted that subgrantees did not report consistently, despite being asked to document interactions and use the codebook to classify their interactions. Some subgrantees documented in granular detail (e.g., noting each phone call); others documented less frequently.

5.3 Next Steps for Evaluation Efforts

This well-designed and well-implemented quasi-experimental study offers promising support for the NKH campaign strategy approach for reducing child hunger. Even though participation did not consistently increase across all programs at all schools, we saw strong increases in the breakfast program, which was the program most consistently emphasized by subgrantees. We know from the implementation evaluation that subgrantees often shifted program resources to school breakfast efforts and expanded those resources as successes in the school breakfast program were realized. Further, all subgrantees reported success with summer meals implementation.

Nearly all the lessons learned for implementation success involve responsiveness and adaption to partners and community stakeholders. Obstacles in implementation with the afterschool meal and snack program limited our evaluation. Future evaluation efforts of these programs may show promise considering our current results.

For future iterations of this study, consideration should be given as to the most appropriate evaluation design for this type of intervention. Considering the intended fluidity of the campaigns in terms of content and timelines (e.g. different start time points), a rigorous evaluation may not be an appropriate design for the reasons we experienced and noted. Instead, the campaign strategy may be better assessed with a strictly qualitative evaluation. However, if moderate evidence is required for this intervention, we recommend a more explicit definition of what constitutes a defined program (with parameters for reach and dose), and a clear indication of the start of

program implementation. A larger pool of intervention schools would facilitate the search for matching pairs thus enabling the quasi-experimental design to demonstrate program impact. Moreover, though not a direct contributor to level of evidence, fidelity would be better assessed if a fixed (vs. fluid and adaptive) campaign was implemented at each evaluation site (e.g. set number of classes, fixed number and type of contacts).

5.4 Lessons Learned

From our work, we compiled a series of lessons about effective implementation of the SIF NKH program as well as important considerations for conducting school-based evaluations.

▲ Program Lessons

As described in detail earlier in the report, subgrantee lessons learned reflect subgrantees' efforts to engage schools, leverage partnerships, tailor campaign strategies, identify effective staff characteristics, increasing subgrantees' public profile, and increase awareness of campaign activities. Key lessons learned from the implementation work are:

- Strategic planning and identifying champions facilitate implementation of BAB and afterschool meals and snacks.
- Tailoring technical assistance to the needs of specific schools maximizes the impact and fosters the partnership between the subgrantee and school.
- Effective campaign staff must be able to build strong positive relationships with local school districts to facilitate cooperation.
- Being known in the community as an organization addressing childhood hunger can increase campaign awareness and effectiveness.
- Community-based campaign efforts to spread awareness through "word of mouth" can be an effective strategy to increase participation in summer meals programs.

▲ Evaluation Process Lessons

RTI's lessons learned reflect our experiences throughout the entire impact evaluation in securing the necessary approvals to conduct the research and recruiting and engaging schools, school liaisons, and individuals for participation in the evaluation.

1. **Identifying a district-level champion and fostering connections with school representatives facilitated the school district research application process.** To undertake data collection activities at schools, RTI needed to secure approval from the schools' district offices, which required a research application process. RTI found it important to have a champion within the district office to facilitate and expedite this application and approval process. To this end, RTI made efforts to connect a representative from the study schools (e.g., the principal or school liaison for the FoRKS study) with their district's specified research application point of contact to help "put a face to the name" on the application and accelerate the resolution of any questions or concerns about the application. Additionally, having an understanding of the deadlines for the application review cycle and meeting schedules of reviewers will help prevent delays in getting approval. For example, during the summer, review committees may meet less frequently requiring a longer time that the application needs to be under review.
2. **The involvement of a school liaison was essential for a successful evaluation.** RTI recruited a FoRKS Coordinator to assist with study participant recruitment and coordination of study logistics. These FoRKS Coordinators worked at the schools in other capacities (e.g., family coordinators, social workers, assistance principals, etc.) and played a crucial role in individual participant recruitment and scheduling for onsite and phone interviews and arranging on-site logistics for main study sites. For recruitment, FoRKS Coordinators provided RTI with school rosters for randomly selecting students for the study. They also

distributed recruitment materials to selected students in their weekly folders and conducted follow-up calls to schedule students. For main study sites, FoRKS Coordinators coordinated with RTI to prepare for onsite data collection visits and conducted additional outreach to participants while data collection teams were onsite to ensure scheduled interviews were completed. FoRKS Coordinators also played a critical role in contacting hard-to-reach participants, such as parents without working phone numbers, and some led recruitment efforts when RTI was not granted access to students' contact information. FoRKS Coordinators received an honorarium for their work and an additional incentive each completed interview they scheduled. FoRKS Coordinators also provided cafeteria menus to data collectors and linked them to cafeteria staff regarding meal questions. They also shared information about their school's ethnically diverse populations and the cultural foods that data collectors may encounter in dietary recalls to prepare for dietary data entry.

- 3. A successful evaluation requires a high level of communication and human resources to ensure adequate recruitment, engagement and data collection completion.** To successfully complete the evaluation, we needed to recruit as well as coordinate and engage with schools, FoRKS Coordinators, and individuals for participation. Although this was known and planned for in advance, unforeseen challenges arose with recruiting and engaging at the school and individual participant levels that necessitated high levels of frequent communication in order to problem solve and secure participation. At the school level, we encountered challenges with staff turnover and getting the attention of busy school leaders and staff to carry out recruitment efforts like obtaining school rosters and student contact information, conducting training on the use of scheduling software, and distributing study packets to students directly through the schools. These tasks often required months of communication through different channels with various stakeholders to resolve. Additionally, staff needed more time to recruit the targeted number of study participants in part because of missing contact information (e.g., lacking a secondary means of contact for follow up such as an email address) and/or non-working phone numbers; this proved particularly challenging in schools with many low income families who were transient. This involved an additional step of working with FoRKS Coordinators to verify contact information and resulted in having to draw additional samples at all the schools. Having the ability to verify student contact information and fill in missing information prior to initiating could have improved the process. Incorrect information also increased the number of recruitment call attempts from what was originally planned as well as the need for additional samples to be drawn for recruitment for all schools to meet the target number of interviews. In addition to phone calls, we also sent multiple text message and email reminders to participants about their scheduled interviews, and FoRKS Coordinators conducted additional reminder outreach, particularly at schools where the period of data collection was extended. The challenges in reaching and recruiting participants may be mitigated by having the ability to verify student contact information and fill in missing information prior to initiating recruitment.
- 4. Successful engagement of study participants involved multiple touch points between baseline and follow-up data collection.** Considering the amount of effort needed to establish communication with schools during the baseline data collection period, we learned quickly the importance of staying in contact with individual school staff and FoRKS Coordinators in between data collection periods to ensure school personnel would be prepared to assist us during follow-up data collection. We conducted multiple touch points with schools, FoRKS Coordinators, and individual participants between baseline and follow-up data collection points. This approach was meant to keep the study top of mind with these stakeholders and facilitate efforts to coordinate and successfully complete follow-up data collection. For example, school principals, FoRKS Coordinators, and parents/caregivers all received "Thank You" letters for their participation in baseline which also included reminders that the study would be in touch with them a few times throughout the year. We also routinely sent check-in emails and scheduled phone calls with FoRKS Coordinators between baseline and follow-up data collection. In the weeks prior to the new school year and before

contacting FoRKS Coordinators about follow-up data collection, we also mailed each FoRKS Coordinator a parachute to use with students in physical education classes and other activities. This helped to remind FoRKS Coordinators of our return and prevent any surprise when reaching out to them. In between data collection, we also sent follow up reminder letters to parents/caregivers at ancillary sites and sent the children a key chain and later a water bottle as a reminder of the study and the importance of their participation. These efforts were largely successful, as RTI and the University of Minnesota were able to exceed recruitment targets at several schools. For the schools where the target number of interviews were not completed, RTI was not granted access to student contact information for recruitment purposes.

- 5. Incentives for schools and school liaisons facilitated engagement in the study.** In addition to a high level of communication, we provided incentives to schools and FoRKS Coordinators, for their assistance in facilitating data collection, which contributed to our ability to retain all schools for both baseline and follow-up data collection periods. Schools received a contribution for each interview completed at their school, while FoRKS Coordinators received money for each interview they scheduled that was completed, which increased the FoRKS Coordinators' motivation to schedule and ensured the completion of as many interviews as possible.
- 6. Conducting data collection earlier in the school semester may facilitate data collection coordination and bolster participation rates.** For follow-up data collection we saw a higher rate of cancelled or missed interview appointments as the fall school semester progressed. This may be because of poor weather, fall break, and holidays in November and December and increasingly busy parental/caregiver schedules. Holidays further complicated coordinating dates for onsite data collection because of school closures. Additionally, because we sought to collect dietary data based on a week of normal eating patterns, we did not collect data in the week following holiday breaks. Collecting data earlier in the semester may help mitigate these risks. Even though the ability to set data collection dates and secure rosters may be compromised if school offices are closed or personnel are out of the office during the summer, communications around planning for data collection could begin in the spring semester.

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